DOCUMENT RESUME

ED 478 610 IR 021 984

TITLE	2002 Update to the Long-Range Plan for Technology, 1996-2010. A Report to the 78th Texas Legislature from the Texas Education Agency.
INSTITUTION	Texas Education Agency, Austin.
PUB DATE	2002-12-00
NOTE	152p.; Submitted to the Governor, Lieutenant Governor, Speaker of the House, and the 78th Legislature. For the "Long-Range Plan for Technology 1996-2010. A Report to the 75th Texas Legislature from the State Board of Education," see IR 020 558.
AVAILABLE FROM	Publications Office, Texas Education Agency, P.O. Box 13817, Austin, TX 78711-3817 ($10). For full text: http://www.tea.state.tx.us/technology/ .
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	EDRS Price MF01/PC07 Plus Postage.
DESCRIPTORS	Computer Uses in Education; Educational Change; *Educational Planning; *Educational Technology; Elementary Secondary Education; Higher Education; Long Range Planning; State Action; State Programs; *Technology Planning
IDENTIFIERS	Texas

ABSTRACT

This document reports on the Long-Range Plan for Technology, 1996-2010 for the state of Texas. At the beginning of the report is the "Vision of Technology in Education, 2002." The first section of the report addresses the need to update the long-range plan in the following areas: state legislation; federal legislation; developments in technology; business and industry expectations; climate of Texas schools; higher education; community needs; and lessons learned since 1988. The second section presents an update to the plan, containing requests to the Texas Legislature, actions, and recommendations in four areas: (1) teaching and learning; (2) educator preparation and development; (3) administration and support services; and (4) infrastructure for technology. The third section reports on the current status of the plan in the same four areas. The fourth section summarizes the related services and activities of each of the state's 20 Education Service Centers. The "Texas STaR Chart: A Tool for Planning and Assessing School Technology and Readiness Aligned with the Long-Range Plan for Technology, 1996-2010" is appended. Contains a glossary. (MES)

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A REPORT TO THE
78TH TEXAS LEGISLATURE
FROM THE TEXAS EDUCATION AGENCY

2002 UPDATE TO THE LONG-RANGE PLAN FOR TECHNOLOGY, 1996-2010

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2002 Update to the Long-Range Plan for Technology, 1996-2010

A Report to the
78th Texas Legislature
from the
Texas Education Agency

Submitted to the Governor,
Lieutenant Governor,
Speaker of the House, and the
78th Texas Legislature

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December 2002

The Honorable Rick Perry, Governor of Texas
The Honorable Bill Ratliff, Lieutenant Governor of Texas
The Honorable James E. "Pete" Laney, Speaker of the House of Representatives
Members of the 78th Texas Legislature

I am pleased to share with you the *2002 Update to the Long-Range Plan for Technology, 1996-2010*, which includes the third progress report on implementing the plan.

The Texas Education Code, Section 32.001, required the State Board of Education to develop a long-range plan for technology. The resulting *Long-Range Plan for Technology, 1988-2000* was adopted by the Board in November 1988. The measure also required that biennial reports be completed and provided to the governor and legislature on the progress toward implementing this plan.

In the fourteen years since that first plan was adopted, changes in existing technologies and the emergence of new technologies created new and different opportunities for schools. Changes in legislation created more control at the district level, giving districts greater opportunities than ever before to make decisions regarding technology. An update to the first plan clearly was necessary and in 1996, the State Board of Education adopted the *Long-Range Plan for Technology, 1996-2010* and presented it to the legislature. In 1998, the first progress report for the revised long-range plan was produced; it detailed the period from September 1996 through August 1998. In December 2000, the second progress report was issued, detailing activities during the period from September 1998 through August 2000. This report reflected changes occurring in the key areas of: Teaching and Learning; Educator Preparation and Development; Administration and Support Services; and Infrastructure for Technology; and their effects on students and education.

This third progress report on the *Long-Range Plan for Technology, 1996-2010* documents accomplishments and activities from September 2000 through August 2002. Highlighted in this report are the collaborations and progress made by Texas public schools, regional education service centers, and the Texas Education Agency toward implementing this updated plan. This report describes progress on both previous and new initiatives.

I hope you will find the efforts described in this report as illuminating as I do. The State Board of Education looks forward to the opportunity to work with regional and local entities on the continued implementation of this plan.

Respectfully submitted,

Grace Shore

Grace Shore, Chair
State Board of Education

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Educational Technology Advisory Committee (ETAC)

The charge to the Educational Technology Advisory Committee was to conduct midpoint review and adjustment of the *Long-Range Plan for Technology, 1996-2010* to ensure recommendations remain appropriate, determine if new recommendations are warranted, and create benchmarks or indicators that will let us know where we are as a state and as individual schools and districts in achieving the targets addressed in the LRPT.

The ETAC provided a great deal of valuable input to the *Update to the Long-Range Plan for Technology, 1996-2010.* In concert with the update, ETAC also developed the Campus Texas STaR Chart, a planning tool for schools to use to gauge their progress toward implementation of the LRPT.

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Vision of Technology in Education, 2002

"We don't buy glasses; we buy vision.
We don't buy awnings; we buy shade.
We don't buy a newspaper; we buy information.
It isn't the product we want.
It's what the product will do for us.
We buy something or pursue something, not because we want the thing itself,
but because we want what that thing will give us or do for us."

Max Anders in The Good Life:
Living With Meaning in A "Never Enough World"

Imagine a home...

...where every parent—regardless of native language or socioeconomic background—can communicate readily with teachers about children's progress, improve parenting skills, and get a degree or job training without leaving home or work.

Imagine a school...

...where every student—regardless of zip code, economic level, age, race or ethnicity, or ability or disability—can be immersed in the sights, sounds, and languages of other countries; visit museums; research knowledge webs from the holdings of dispersed libraries; and explore the inner workings of cells from inside the cell or the cold distance of outer space from inside a virtual* spacesuit.

Imagine a district...

...where every educator—regardless of subject, experience, or district location, size or wealth—can get hands-on training instantaneously, when or where he or she needs it; interact with a virtual community of professional colleagues; and have access to financial data and student performance information as well as the analytical tools to use them effectively.

Imagine a state...

...where every community member can visit the doctor for an examination and needed laboratory tests while at home or the office; collaborate with work colleagues at distant sites about complex data sets or video graphics; search primary source materials on an event half-way around the world; and take a high school or college course with fellow students from Port Arthur to El Paso by communicating rather than commuting.

*Virtual relationships or items are based on interactions or objects or representations that are in digital rather than in physical form.

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What needs to happen for these images to become a reality?

- A technology infrastructure connecting schools, colleges, medical facilities, libraries, businesses, and homes must be established.
- Successful partnerships must exist among industries, the educational system, and other public service providers so that the new technologies and their applications are available and appropriate for education—and not only for the business and entertainment markets.
- The educational system must consider extending of the traditional boundaries of the school year, scholastic age, and geographic location.
- The teaching and learning process must be receptive to a wide variety of options, including expanding opportunities to learn into the home and into the broader community, developing virtual relationships among learners, and learning through distributed synthetic environments as well as on site.
- Educators must learn to access and incorporate a wide variety of resources for instructional support, research, and administration.
- Students of all ages and backgrounds must actively pursue resources to build individual and collaborative knowledge communities.

If the images become reality, who will benefit and what will the benefits be?

Students can expect higher performance and deeper engagement in academic endeavors by accessing resources available through a variety of modalities appropriate to individual learning styles.

Parents can expect not only to participate more directly in their children's education but also to improve their own knowledge as parents and citizens.

Teachers can expect to employ a wider variety of instructional approaches by having access to professional resources and by determining when and how to receive support, staff development, and classroom information.

Administrators can expect to be more fully informed and to manage schools and programs more efficiently through timely access to, and analysis of, information, and to make direct operations of schools and administrative decision-making more effective.

Taxpayers and school board members can expect more efficient use of resources, both financial and human, and more equitable allocation of each.

Community members can expect more opportunities to participate in key educational and community decisions and to participate more fully in the educational process.

Communities can maintain their integrity because of the ability to move information and not people.

Texans have made great strides toward realizing our vision for technology in education. Progress will need to continue until all of the stakeholders benefit from the implementation of the *Update to the Long-Range Plan for Technology, 1996-2010.*

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The Need to Update the *Long-Range Plan for Technology, 1996-2010*

Executive Summary

In accordance with legislation passed in 1985, the State Board of Education developed and adopted the *1988-2000 Long-Range Plan for Technology.* Although visionary for its time, the need to update the plan became evident, and in 1996 the *Long-Range Plan for Technology, 1996-2010* was presented to the Texas Legislature. As we move into the 21st century, it is evident that the plan once more requires an update as the result of a number of factors. These factors include:

- legislation at the state and federal levels
- developments in technology
- increased expectations by business and industry
- changes in the public education system
- changes in higher education
- community needs

Legislation. The 74th Texas Legislature passed three bills that affect state planning for educational uses of technology. Senate Bill 1 directed the State Board of Education to develop a plan for schools to acquire and use technology. House Bill 2128 established the Telecommunications Infrastructure Fund Board to establish an infrastructure among public education, higher education, libraries, and medical facilities. Finally, House Bill 85 directed the Texas Higher Education Coordinating Board to develop a master plan for distance learning.

The 77th Texas legislature passed House Bill 1475 which mandates a Master Technology Teacher certification and grant program. Senate Bill 975 (29.903), enacted by the 77th Texas Legislature, directed the commissioner to implement a program under which a school district may offer electronic courses to students primarily through the Internet or other electronic media; and in which a student enrolled in the course is not physically present in the classroom for all or part of the course.

At the federal level, Goals 2000: Educate America Act called for participating states to improve student achievement through technology. The Telecommunications Act of 1996 provided support to schools' access to the national information infrastructure. The No Child Left Behind Act of 2001 (NCLB) places more emphasis on the necessity for students, teachers, administrators and parents to become technologically literate.

Developments in Technology. The major development, barely foreseen in the 1988 plan, is the growth of the Internet. Connectivity to the Internet affords educators, students, and community members a wealth of opportunities that must be reflected in the board's long-range plan for technology since connectivity affects not only technology but also the process of education. The plan also addresses advancements in multimedia technologies.

Business and Industry. Business and industry expect entry-level workers to have sophisticated technology skills. Public education and the private sector need to work together to identify and foster these skills.

Public Education. Considerable changes have taken place in the past fourteen years in the public education system. Among these are a significant shift toward local flexibility and a diminished state role; revision of the state curriculum, including expectations for students' proficiencies with technology; the development of the Commissioner's Plan for Information Access, which would increase educators' access to statewide education data; and, a more diverse student population with greater learning needs. Texas Essential Knowledge and Skills for Technology Applications were put into place and standards for beginning teachers have been established. The No Child Left Behind Act requires a commitment on the part of grantees to expend a minimum of the grant award for sustained professional development enabling all educators to meet the standards. Activities fulfilling this requirement can incorporate technology into teaching and learning.

Higher Education. The Master Plan for Distance Learning addresses enrollment of public school students in college courses by distance. In addition, pre-service teachers must be prepared to teach the technology skills that students need.

Community Needs. Community members as well as public schools can benefit from the educational resources available through a telecommunications infrastructure.

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Introduction

In House Bill 1304, the 69th Texas Legislature required the State Board of Education to develop a long-range plan for technology. The resulting document, *1988-2000: Long-Range Plan for Technology*, was adopted by the board in 1988. It plotted the course for meeting educational needs through technology and for implementing the concomitant 1988-2000 changes in education. In 1996, it became evident that the plan needed to be updated to reflect technology advances. The *Long-Range Plan for Technology, 1996-2010* was presented to the 75th Texas Legislature. Once again, it is time to update the plan to reflect the new educational technology needs of all educators.

Although the plan's accomplishments, summarized in the *Progress Report on the Long-Range Plan for Technology, 1996-2010*, are considerable, a number of factors compel a reexamination of its goals and recommendations. These factors include changes in:

- state legislation
- federal legislation
- developments in technology
- business and industry expectations
- climate of Texas schools
- higher education
- community needs
- lessons learned since 1996

State Legislation

In 1995, the 74th Texas Legislature enacted three laws that affected the original long-range plan for technology.

Senate Bill 1

Senate Bill 1 states, "The mission of the public education system of this state is to ensure that all Texas children have access to a quality education that enables them to achieve their potential and fully participate now and in the future in the social, economic, and educational opportunities of our state and nation. The mission is grounded on the conviction that a general diffusion of knowledge is essential for the welfare of this state and for the preservation of the liberties and rights of citizens." In order to support the diffusion of knowledge, Senate Bill 1 established Section 32.001 of the Texas Education Code (TEC) which calls for the State Board of Education to develop a plan for:

- acquiring and using technology in the public school system;
- fostering professional development related to the use of technology;
- fostering computer literacy among public school students, so that by the year 2000 each high school graduate in the state has computer-related skills that meet standards adopted by the board;
- identifying and, through regional education service centers, distributing information on emerging technology; and
- making technology available to students with disabilities.

The fundamental goal of this *Long-Range Plan for Technology, 1996-2010* is to enhance students' acquisition of knowledge through technology.

Impact on the Long-Range Plan for Technology, 1996-2010. Many of the objectives set forth in Section 32.001, of the Texas Education Code were addressed in the original long-range plan for technology. Some sections of the plan, however, such as those on professional development and accessibility, needed strengthening.

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House Bill 2128

House Bill 2128, Section 3.606, created the Telecommunications Infrastructure Fund. Deriving revenue through the Telecommunications Utilities Account and the Commercial Mobile Service Providers Account, the fund is intended to award $150 million in grants and loans for each of the next 10 years to public schools, colleges, libraries, and telemedicine centers to:

- provide computer equipment, wiring, and infrastructure—that is, the tools, materials, training, and services—needed for distance learning* and information sharing;
- develop and deliver courses and materials by distance; and
- train teachers, faculty, librarians, or technicians.

Impact on the Long-Range Plan for Technology, 1996-2010. The expansion of the Internet and coordination of telecommunications planning among public education, higher education, libraries, and medicine are priorities of House Bill 2128 and needed to be addressed in the updated long-range plan for technology.

House Bill 85

House Bill 85 directed the Texas Higher Education Coordinating Board to develop a distance learning master plan.

Impact on the Long-Range Plan for Technology, 1996-2010. As with House Bill 2128, House Bill 85 fosters closer coordination between public and higher education for distance delivery of courses, materials, and professional development.

House Bill 1475

The 77th Texas legislature passed House Bill 1475 which mandates a Master Technology Teacher certification and grant program. This program is very similar to the Master Reading Teacher and Master Mathematics Teacher.

The law states that the commissioner shall make grants to school districts to pay stipends to selected certified master technology teachers. The commissioner shall give preference to teachers who teach at high-need campuses. Criteria for selecting high-need campuses will be identified and approved as part of the commissioner rules. The grant program will be implemented after the development of the examination for the master technology teacher certification. While there is currently no funding for the grants, appropriations will be needed once the Master Technology Teacher Certificate and examination have been implemented by SBEC.

Impact on the Long-Range Plan for Technology, 1996-2010. Both the Texas Education Agency and State Board for Educator Certification are involved in the implementation of this legislation to ensure that there are teachers with special training to work with other teachers and with students in order to increase the use of technology in each classroom.

Senate Bill 975

Senate Bill 975 (29.903), enacted by the 77th Texas Legislature, directed the commissioner to implement a program under which a school district may offer electronic courses to students primarily through the Internet or other electronic media; and in which a student enrolled in the course is not physically present in the classroom for all or part of the course.

Impact on the Long-Range Plan for Technology, 1996-2010. As part of implementing Senate Bill 975, districts providing online, electronic courses to students were invited to participate in a virtual school pilot program for fall 2001 to provide input to the TEA. The VSP Phase II will begin with the 2002 spring semester and conclude in August 2003.

*Distance Learning is that in which some materials and/or participants are not local.

Federal Legislation

Goals 2000: Educate America Act

Section 317 of Goals 2000 legislation, passed by the U.S. Congress in 1994, calls for state planning to improve student achievement by integrating technology into curriculum. The Goals 2000 Plan calls for a task force to describe:

- requirements for introducing state-of-the-art technologies into classrooms and school libraries;
- advanced technologies' enhancement of student learning;
- support for the national education goals;
- professional development;
- meeting the needs of low-income children through technology;
- use of existing telecommunications infrastructure;
- assessment;
- purchase of equipment by local education agencies;
- cooperation with the private sector and telecommunications entities; and
- promotion of adult literacy.

Impact on the Long-Range Plan for Technology, 1996-2010. This legislation led Commissioner of Education Mike Moses to appoint the Texas Task Force on Educational Technologies to reexamine the State Board of Education's original long-range plan for technology. The objectives of federal legislation address specific segments of the K-12 population and include communities and other entities in the scope of those who will be served by technology.

Telecommunications Act of 1996

In January 1996, the U.S. Congress passed telecommunications reform legislation. It included specific provisions to ensure affordable telecommunications access for America's schools and libraries to the national information infrastructure.

Impact on the Long-Range Plan for Technology, 1996-2010. The federal legislation emphasizes the importance of telecommunications for all schools and libraries and offers the telecommunications industries the opportunity to restructure and expand their services. The long-range plan for technology must attend to the national focus on universal connectivity while allowing flexibility to schools as the telecommunications landscape develops and evolves.

No Child Left Behind Act of 2001

In January 2001, the U.S. Congress passed the No Child Left Behind Act of 2001 (NCLB). Title II, Part D, Subpart 1, of NCLB, Enhancing Education Through Technology Act of 2001, provides assistance to local educational agencies (LEAs) for the implementation and support of a comprehensive system that effectively uses technology in elementary schools and secondary schools to improve student academic achievement.

Impact on the Long-Range Plan for Technology, 1996-2010. Experts and practitioners have all agreed on the importance of not just increasing technology capacity within schools, but integrating it with the curriculum. A commitment to researching what works along with measuring the impact technology has on instruction and learning is evidenced by the focus placed on state evaluations along with a national multi-year study intending to explore the conditions needed for effective use of technology.

Developments in Technology

In the sixteen years since the adoption of the original long-range plan for technology, many technological advances have occurred. High performance computers and communications equipment today are smaller, more powerful, and more capable of performing expanded tasks than was the case with 1986 technology. Examples include desktop computers capable of delivering multimedia services such as sound and moving images. Furthermore, equipment costs have decreased as various forms of technology have reached critical mass by entering the business and home markets.

If a keyword in the previous decade was "computers," the keyword in the 1990s was "connectivity."

With connectivity comes the opportunity for teachers to explore the Internet, expand distance learning, participate in professional development by distance, and transfer data electronically. Connectivity can allow learning to occur in different and nontraditional ways, expanding the number and types of learners. Other applications of new and emerging technologies —virtual reality and virtual relationships, knowledge webs, shared synthetic environments, and distributed learning and experiences—are illustrated in the "Vision of Technologies in Education, 2010" section on page 1 of this document.

Impact on the Long-Range Plan for Technology, 1996-2010. While the *1988-2000 Long-Range Plan for Technology* was visionary for its time, changes caused by the emergence of new technologies and cost-effective use of existing technologies created a need to examine their use in Texas schools. As projected in the original plan, instructional methods evolved as technology was infused into the educational environment. Thus, the *Long-Range Plan for Technology, 1996-2010* addressed both emerging technologies and the impact they have on pedagogy. As we move into the 21st century, we again find the need to address current technology needs of all learners through the *2002 Update to the Long-Range Plan for Technology, 1996-2010.*

Business and Industry Expectations

Businesses of all sizes increasingly automate and computerize many functions. These functions include designing and manufacturing; analyzing sales and marketing information; sharing data over long distances among separate facilities; developing multimedia presentations; and using the Internet for a multitude of purposes, including advertising, promotions, and sales. To remain competitive and efficient in the world marketplace, employers now demand sophisticated technology skills, even of entry-level employees.

Impact on the Long-Range Plan for Technology, 1996-2010. Young people must become experienced with the technologies used by business and industry. This plan must work with the private sector to articulate industry's expectations, to project future needs, and to encourage cooperation between public education and the private sector.

Climate of Texas Schools

Local Flexibility

With the passage of Senate Bill 1 in 1995, authority and accountability shifted to local authorities. The original long-range plan, written in a time of centralization, was prescriptive in nature. Therefore, an updated long-range plan was needed to provide leadership, allow flexibility, and be more closely aligned with local control. The plan provided assistance to schools for local policy development and decision-making to best fit district needs.

Essential Knowledge and Skills

Senate Bill 1 also called for the development of Essential Knowledge and Skills to replace the Essential Elements adopted in 1984. This effort, begun in 1995 and implemented in 1998, incorporates high expectations for students' use of computers, telecommunications, and other technologies. These expectations will not only allow students to access and analyze information, thus increasing learning power, but they will also foster the occupational skills called for by the private sector. This updated long-range plan for technology must support these expectations by providing both the infrastructure and the training that schools and educators need.

Commissioner's Plan for Information Access

The state's Public Education Information Management System (PEIMS), begun in 1988, has established a comprehensive database of information about public education. Access, however, is still highly limited. The Commissioner's Plan for Information Access will capitalize on the success of PEIMS by bringing easy-to-use information to the classroom teacher. It will provide decision support systems to school administrators, school boards, and other policymakers. The updated technology plan encompasses the plan for information access.

Student Population

The face of education in Texas has changed since 1988. The Texas student population is growing rapidly, from 3.2 million in the 1989-90 school year to more than 4.1 million by the year 2002. As it grows, Texas' student population is becoming more diverse. In the 1990-91 school year, racial and ethnic minority children became the majority student population in Texas. By 2000-2001, they accounted for almost 58% of students. Hispanics are the fastest-growing student group, accounting for 70% of the annual enrollment growth. Enrollment in bilingual programs is expected to increase by 50% by the 2002-2003 school year.

In terms of annual growth by grade, the greatest increase in student enrollment has occurred in prekindergarten, which serves limited-English proficient and low-income students. More than 49.3% of the state's students are economically disadvantaged.

Impact on the Long-Range Plan for Technology, 1996-2010. The updated long-range plan for technology must reflect these multiple developments. The plan recommends flexible paths for school policymakers and personnel to consider but does not presume a consistent pattern of development and use across the state.

Because of the comprehensive revision of the curriculum and the concerted effort to incorporate technology applications and skills, the original long-range plan for technology provides for the infrastructure necessary to meet teachers' and students' curricular needs. A fundamental aspect of this revised plan is the expansion of this infrastructure beyond that which was understood in 1988 to that which is necessary through the first decade of the 21st century.

The plan also encourages coordination across all education programs for all learners, regardless of their ages, disabilities, or learning styles. Technology plays a particularly critical role in meeting the needs of students with disabilities. Technology use needs to be a part of a core curriculum for such students so that they, like all students, can be prepared to use appropriate applications in higher education and the workforce. In addition, assistive technologies can help students with disabilities acquire the intellectual, academic, problem-solving, and other skills that all children are expected to learn in school. Board-adopted instructional materials, including electronic ones, and information delivered by technology must be accessible for all students and teachers. In addition, teachers—both those of students with disabilities and those who themselves have disabilities—must receive training in selecting and using appropriate technologies.

Above all, the *2002 Update to the Long-Range Plan, 1996-2010* must ensure equitable access by all students to both the technology infrastructure and to the learning resources that it provides. A critical element of the original plan was the role that technology, equitably distributed, can play in addressing economic and other disparities among students. This goal is no less critical in the plan for 1996-2010.

Higher Education

Institutions of higher education in the state prepare more than 85% of the teachers in Texas classrooms. The ability of new teachers to incorporate technology use appropriately into instruction depends in large part on the training they receive in their preservice education. The Texas Higher Education Coordinating Board's *Master Plan for Distance Learning* addresses the sharing of library resources, distance enrollment of high school students in college courses, and integration of technology into teaching and learning.

Impact on the Long-Range Plan for Technology, 1996-2010. Students graduating from Texas high schools must be prepared with the technology skills they will need in colleges and universities. Also, because preservice teachers need to be prepared to use technology when they enter the classroom, recommendations are made in the updated plan regarding teacher preparation. The plan also recommends ongoing coordination by all institutions and levels of education to ensure the sharing of resources and expertise and the efficient and effective use of telecommunications.

Community Needs

Parents of school-age children are encouraged to become involved in their children's education. Telecommunications technologies offer multiple ways for this involvement to occur. Examples range from teachers electronically sharing homework assignments with parents to parents viewing classroom activities from a distance or electronically receiving parent education programs.

Other adults might also benefit from educational programs that are enhanced or delivered by technology. Literacy programs are an example. According to the Texas Adult Literacy Survey conducted in 1992, as many as 28% of adults in the state (approximately 3.5 million people) function at the lowest level of literacy, able to accurately perform only limited daily tasks.

Impact on the Long-Range Plan for Technology, 1996-2010. School or community-based technology programs can deliver adult education, provide professional development, and accelerate adult learning. Cooperative planning between schools and their communities can inform parents of their children's educational progress, involve parents in their own educational programs, and expand the efficiency and use of school or community-based technology centers.

Lessons Learned Since 1988

Perhaps the strongest needs compelling revision of the *1988-2000 Long-Range Plan for Technology* are the lessons learned since its inception. According to research conducted in 1996 by the Texas Center for Educational Technology to inform the development of the revised plan, school districts report that the following factors are critical:

1. collaborative planning
2. technology integration
3. financial support
4. combination of funds, knowledgeable people, and a thoughtful plan
5. comfort with technology
6. continual support
7. slow pace
8. teacher commitment
9. revised personnel units
10. professional development

Impact on the Long-Range Plan for Technology, 1996-2010. The following plan incorporates these lessons.

2002 Update to the Long-Range Plan for Technology, 1996-2010

Requests to the Texas Legislature, Actions, and Recommendations

In order to achieve the Vision of Technology in Education in 2010 and to meet the needs delineated above, the *2002 Update to the Long-Range Plan for Technology 1996-2010* consists of three types of procedures for implementation. The plan:

- makes requests to the Texas Legislature,
- states actions that will be taken by the Texas Education Agency; and
- proposes recommendations to other entities, including other state agencies, regional education service centers, local education agencies, institutions of higher education, communities, and the private sector.

The requests to the Texas Legislature, actions by the Texas Education Agency, and recommendations to other entities concentrate on four areas:

- Teaching and Learning
- Educator Preparation and Development
- Administration and Support Services
- Infrastructure for Technology

In addition, legislative requests, actions, and recommendations are established for three time periods:

1. Short Term: 2003-2004
2. Mid Term: 2005-2007
3. Long Term: 2008-2010

Following are the requests to the Texas Legislature and the actions and recommendations for each of the four areas, delineated by time period. Each area is introduced by an executive summary.

Executive Summary

In the past 16 years, the Texas Legislature has accomplished a number of significant actions to support the integration of technologies into K-12 and higher education. These legislative actions and other efforts at the local, regional, and state levels to implement the state long-range plans for technology have placed Texas in a role of national leadership for technology in schools. Among the highlights are the following achievements:

- directed the State Board of Education to develop an educational technology plan;
- established the Technology Allotment, which currently provides $30 per student to every school district for professional development and acquisition of hardware and software;
- established the Telecommunications Infrastructure Fund to provide hardware, wiring, materials, and training for telecommunications installation and development over a 10 year period;
- established statewide technology curriculum specifications through the Technology Application TEKS (Texas Essential Knowledge and Skills);
- acquired statewide access to electronic library resources;
- called for electronic "textbook" submissions;
- directed the Texas Higher Education Coordinating Board to develop a master plan for distance learning;
- established pilots of virtual schooling;
- directed the State Board for Educator Certification to establish a certification for master technology teachers;
- expanded and maintained the telecommunications capabilities of school districts and regional service centers; and
- established the Educational Technology Coordinating Council (ETCC).

These actions join others in helping Texas become a national leader in educational uses of technology and telecommunications. With this legislative support, there is a renewed commitment to sustainability of technology-rich learning environments and to continuous upgrading of both technology and its use in education.

In taking full advantage of these legislative actions, the Texas Education Agency has:

- focused on equity in resource sharing;
- ensured comprehensive and innovative opportunities for distance and virtual learning;
- encouraged innovative uses of technology by schools;
- emphasized using data for documenting progress and for accountability;
- enhanced equity of access to electronic resources through libraries and textbook adoptions;
- specified a technology curriculum and encouraged technology integration across all curricula;
- coordinated with other state agencies and with institutions of higher learning; and
- established and maintained statewide telecommunications networks through satellite (T-STAR) and videoconferencing (TETN).

State implementation of legislative directives and fiscal support is illustrated in the *Progress Report on the Long-Range Plan for Technology 1996-2010* included in this document. This implementation has not only helped to provide the boxes and wires that support communications, but has also enhanced instruction by classroom teachers, enriched students' learning, and touched the lives of parents.

The 78th Texas Legislature can play a similarly critical role in bringing to life the next phase of the State Board of Education's *Long-Range Plan for Technology 1996-2010*. Legislative requests address four key areas:

1. **Teaching and Learning - integrating technology in learning and teaching across the curriculum.**

   Informational resources available through the technology will make the difference in preparing students, teachers and administrators to become technology literate. The No Child Left Behind Act of 2001 calls for assisting every student in crossing the digital divide by ensuring that every student is technology literate by the time the student finishes the eighth grade, regardless of the student's race, ethnicity, gender, family income, geographic location, or disability.

The NCLB legislation also calls for support for using electronic networks and other innovative methods such as distance learning, delivering specialized or rigorous academic courses and curricula for students in areas that would not otherwise have access to such courses and curricula—particularly in geographically isolated regions.

2. **Educator Preparation and Development - identifying standards and enhancing certification.**

   Another purpose of the NCLB legislation is to encourage the effective integration of technology resources and systems with teacher training and curriculum development to establish research-based instructional methods that can be widely implemented as best practices by state education agencies and local education agencies.

   Continual advancements in technologies mean that educators—even those well supplied with hardware and software—are rarely sufficiently prepared to take advantage of the instructional and management opportunities provided by technology.

   All educators need paid professional leave time for training in integrating technologies into teaching and learning, instructional management, professional development and administration. In addition, those who provide the training must be professionally qualified to help educators learn to apply systems in their particular areas of specialty.

   This staff development is not merely short-term. Instead it is retooling a statewide workforce of more than 250,000 professionals. Funds are requested to meet these professional development needs. In addition, incentives are sought to encourage preparation of teachers-in-training at higher education institutions in appropriate uses of technology.

3. **Administration and Support Services - emphasizing a vision of leadership for technology.**

   Legislative action in regard to administrative uses of technologies focuses on the Public Information Management System (PEIMS). Currently, school districts provide at least a portion of the cost of PEIMS preparation. Support for this function should be returned to the regional education service centers. The next step is to redesign PEIMS to take advantage of the state's comprehensive infrastructure and the Commissioner's Plan for Information Access by reducing paperwork and improving access to nonsecure data. This will require legislative action in the mid-term. Ultimately, long-range technology planning can be incorporated into general educational planning at the state level.

4. **Infrastructure for Technology - equalizing resources, infrastructure, and connectivity.**

   The Long-Range Plan for Technology, 1996-2002 called for a comprehensive state technology system—networked among multiple entities—to carry voice, video, and data. Although much progress has been made in this effort, schools still need help acquiring the infrastructure to meet the requirements of NCLB. The NCLB act encourages schools to establish or expand initiatives, including those involving public-private partnerships designed to increase access to technology in schools served by high-need local educational agencies.

The requests to the Legislature that follow vary in their fiscal impact. Some have no impact on the state. Others will reduce costs to schools; still others could entail significant financial impact at the state level and possibly at the local level. The goals of preparing the citizens and workforce of this century make these effects necessary and worthwhile.

Support for those goals that have fiscal impact can come from a variety of sources. The Technology Allotment and the Telecommunications Infrastructure Fund can both be directed for infrastructure, training, or other purposes related to this plan. Incentives can also be developed to encourage application of these funding sources for these purposes. E-Rate discounts and other federal funds available to schools should be optimized to meet the goals of the plan.

Recommendations for Requests to the Texas Legislature

The following requests encourage the Texas State Legislature to continue providing the much needed leadership and resources for implementing this long-range plan. These requests vary in fiscal impact, but they clearly signal a continued investment by the State of Texas in improved schooling through the use of technology. We now have enough experience to know that implementing technology successfully statewide requires a large cast of players with effort aligned through this Texas *Long-Range Plan for Technology*. With effective legislative leadership, and a renewed focus on accountability for stewardship of the state's technology investment, Texas will continue to be in the forefront of leadership for innovation and improved learning with technology in schools.

Teaching and Learning

	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Use general revenue to support Texas Education Agency statewide technology initiatives	→	→	→
2. Support partnerships with providers of instructional products and services to secure rights and cost efficiencies for Texas schools	→	→	→
3. Remove remaining impediments to district use of electronic materials through textbook funds	—	completed	—
4. Modify funding formulas to recognize impact of technology, including distance and online learning	→	→	
5. Include assessment of student technology proficiencies to support accountability	→	→	

Educator Preparation and Development

	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Provide funding to support continuous professional development for integrating technology into instruction, staff development, and administration	→	→	→
2. Support training for educators in integrating technology into teaching and learning, instructional management, professional development, and administration	→	→	→
3. Provide incentives for increased commitment of state and local funds for technology-related professional development	→	→	→
4. Provide incentives for educator preparation programs that provide field-based experiences in settings that integrate technology into instruction	→	→	→
5. Provide adequate funding for development of appropriate assessments for technology applications teaching certificates	→	→	→
6. Provide stipends for master technology teacher program	→	→	→

Administration and Support Services

	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Recognize the responsibility of administrative leadership for appropriate integration of technology across schools and districts	→	→	→
2. Recognize the need for administrators to use data effectively in embracing accountability for learning and operations	→	→	→
3. Support and sustain the Public Access Initiative	→	→	→
4. Restore regional education service center funding for the Public Education Information Management System (PEIMS)	→	→	→
5. Redesign PEIMS with state funding for data collection	→		
6. Eliminate the requirement for a separate state level long-range plan for technology and incorporate technology planning into the State Board of Education Long-Range Plan for Public Education	→	→	→

Infrastructure for Technology

	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Recognize the need for a comprehensive state telecommunications system, in place by 2010, with voice, video, and data capabilities, and with a priority on public education	→	→	→
2. Recognize the need to provide a workstation* to every educator	→	→	→
3. Recognize the need to provide on-demand access for students to the best available technologies to ensure that access is adequate as appropriate	→	→	→
4. Recognize the need, by 2010, for video teleconferencing capability for every campus	→	→	
5. Increase the $30 per student Technology Allotment	→	→	→
6. Recognize the need for full funding to support the comprehensive state technology system and on-demand access by educators and students to the best available technologies		→	→
7. Provide for technology financing guaranteed by the Permanent School Fund Insurance Program		→	→
8. Establish tax incentives for the private sector to share services and current technology	→	→	→
9. Increase funding to meet technology costs in the state facilities program	→	→	→
10. Continue to provide discounts for telecommunications lines (as in HB 2128)	→	→	→
11. Remove impediments (i.e. telecommunications LATAs) to districts using digital content from throughout the state	→	→	→
12. Continue funding the Texas Telecommunications Infrastructure Fund at the current level	→	→	→

*"Workstation" refers to any one of an array of appropriate information and learning devices including, desktop computers, personal digital assistants (PDAs), Internet device, or other emerging technology.

Teaching and Learning

Executive Summary

The teaching and learning component of this document focuses on the instructional needs of educators and the learning needs of students in meeting the vision of technology in education. Tools need to be appropriately acquired and accessed to ensure the seamless integration throughout all content areas to improve student academic achievement.

This plan recognizes the need for students to demonstrate mastery of technology applications proficiencies conveyed in the Texas Essential Knowledge and Skills (TEKS) and supported by federal legislation. Students need technology application knowledge and skills to enable them to synthesize and make connections to other knowledge and skills.

As the necessary technology skills have become increasingly more complex, students must work collaboratively in communities of inquiry to propose, assess and implement solutions to real world problems and communicate effectively with a variety of audiences. This can only be realized through on-demand accessibility of appropriate technology. This long-range plan directs the Texas Education Agency, local education agencies, and higher education entities to help schools and communities meet these technology needs.

Integration of Technology

The implementation of the Technology Application Texas Essential Knowledge and Skills across all content areas offers a rare opportunity to integrate technology into all aspects of teaching and learning. The Teaching and Learning Actions and Recommendations contribute toward meeting the vision for technology use in education by ensuring appropriate use of these instructional resources, the implementation of best practices, and the development of accountability standards.

Technology for Teachers, Librarians and Learners

The teacher-student-librarian relationships in our schools are evolving and will remain important over the duration of this plan. The integration of innovative technologies transforms the teaching process when the teacher becomes a facilitator/mentor, and the librarian works as a partner with the teacher in a student-centered environment. These relationships allow students to work collaboratively in communities of inquiry to solve real-world problems.

The *Texas Long-Range Plan for Technology* embraces the belief that, before technology can significantly improve learning, teachers and librarians must first be competent with the Technology Applications standards that facilitate their work and support student learning.

Midterm initiatives in teaching and learning focus on:

- requiring the technology proficiencies expected of students, teachers, and librarians;
- highlighting and publicizing effective practices;
- establishing partnerships to provide tools and services;
- encouraging strategic planning and evaluation to support the Texas STaR Chart;
- increasing awareness of research on Texas school libraries and the effect of librarians and libraries on student achievement;
- consideration of school library standards as a factor in school and technology improvement; and
- meeting students' learning needs through distance learning and other technologies.

These initiatives will extend on the technology-based experiences begun under the previous long-range plan for technology.

The long-term actions and recommendations strengthen teachers' and students' skills by:

- providing electronic instructional materials that integrate technology into the TEKS;
- developing state accountability measures for students, educators and districts;
- encouraging regional service centers and state and local partnerships with commercial entities to develop products appropriate for Texas schools, and
- funding incentives for teachers who understand technology and how it can be used to increase the availability of information.

Community Involvement

At each stage, the stakeholders recommend ways for parents and communities to use technology for communication and access to learning resources. Each has a role in supporting the acquisition of technology proficiencies for all students and in fostering the integration of technology to improve student academic achievement.

Actions and Recommendations

State

Actions by the Texas Education Agency	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Develop and adopt Texas Essential Knowledge and Skills (TEKS)* that integrate technology into teaching and learning in all areas		completed	
2. Implement and update TEKS that integrate technology into teaching and learning	→	→	→
3. Adopt instructional resources that integrate technology into the Texas Essential Knowledge and Skills	→	→	→
4. Ensure that instructional resources are equitable for all students and educators including those with disabilities	→	→	→
5. Establish expectations for technology proficiencies by educators		completed	
6. Develop procedures for measuring and reporting the extent to which educators meet the SBEC Technology Applications proficiencies	→		
7. Require SBEC Technology Applications standards as the technology proficiencies for all educators to align with standards required for preservice teachers and librarians and supported by federal legislation	→	→	
8. Require documented staff development expectations which ensure the acquisition of SBEC Technology Applications standards for all educators in any grant application	→	→	
9. Update expectations for Technology Applications proficiencies by educators and revise standards for measurement and reporting as defined by SBEC standards.		→	→
10. Reflect the expectations for Technology Applications proficiencies by educators in teacher and librarian appraisal and in the Academic Excellence Indicator System (AEIS) through measuring, analyzing, and reporting results		→	→
11. Establish expectations for technology proficiencies by students in kindergarten through Grade 12, including computer-related skills that meet standards for each high school graduate by the year 2000 (TEC 32.001)		completed	
12. Reflect the expectations for technology proficiencies by students in student assessment and in the *Texas STaR Chart* through measuring, analyzing, and reporting results.	→	→	→

State continued

Actions by the Texas Education Agency	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
13. Update expectations for Technology Applications proficiencies by students			→
14. Provide support for distance learning and distributed learning to equalize learning opportunities for students and educators, including those with disabilities	→	→	→
15. Review and, if necessary, revise policies regarding student credit in distance and distributed learning courses		→	→
16. Develop and incorporate a standardized instructional planning format with accessibility into the teacher technology system so that teachers can electronically share instructional approaches	→	→	→
17. Encourage, coordinate, and support quality planning by school districts	→	→	→
18. Initiate and implement partnerships with providers of instructional products and services to ensure accessibility, secure rights and cost efficiencies for Texas schools and to ensure Texas' participation in content development	→	→	→
19. Provide educators access to use and contribute to an online consumers' guide to technology-based instructional resources	→	→	→
20. Arrange for an external review of state education technology initiatives for expansion, maintenance, revision, or deletion, and make recommendations to the legislature	→		
21. Identify, communicate, and reward best practices of technology integration into teaching and learning	→	→	→
22. Continue to fund and foster innovative practices in the use of technology in teaching and learning	→	→	→
23. Foster innovation in using technology to assess, document, and report student progress	→	→	→
24. Continue to provide research and development for learning, staff development, community education, staffing, and organization of learning environments with technology	→	→	→
25. Participate with the Texas Higher Education Coordinating Board in evaluating procedures for concurrent enrollment of high school students	→	→	→
26. Coordinate adult literacy services for adult learners with libraries and other providers	→	→	→
27. Establish and communicate expectations for parents' and communities' use of infrastructure for access to learning resources	→	→	→
28. Communicate policies and recommendations of the *Long-Range Plan for Technology 1996-2010*	→	→	→

State continued

Recommendations to the State Board for Educator Certification	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Establish certification standards for technology proficiencies by educators in teaching and learning, instructional management, professional development, and administration	———	completed	———

Regional

Recommendations to Regional Education Service Centers	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Establish and provide a menu of services for schools to support implementation of the *Long-Range Plan for Technology 1996-2010* and of regional and local technology initiatives	———	———	——→
2. Disseminate information and offer staff development on technology integration into the curriculum and use of digital content services, including the Texas Essential Knowledge and Skills and expectations for Technology Applications proficiencies for educators and students	———	———	——→
3. Distribute information, offer training, and identify schools modeling best practices for technology planning and use of technology in teaching and learning	———	———	——→
4. Participate in partnerships to develop instructional resources and services	———	———	——→
5. Provide to educators and students facilitated preview of learning resources, especially those provided through state licenses and adoptions	———	———	——→
6. Assist schools in developing and implementing strategies to meet the Performance Descriptions in the TEKS	———	———	——→
7. Offer continual technical assistance throughout the year for technology planning	———	———	——→
8. Disseminate information about regional industry needs for graduates' technology skills	———	———	——→
9. Offer grant writing services and information regarding funding opportunities		———	——→

Local

Recommendations to Local Education Agencies	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Develop strategies for students to improve academic achievement to meet the TEKS	→	→	→
2. Ensure the achievement of students' technology proficiencies according to the benchmarks for Technology Applications TEKS	→	→	→
3. Provide staff development for teachers, librarians, principals, and administrators that aligns with SBEC Technology Applications standards and supports federal legislation	→	→	
4. Support the transformation of the teaching process by promoting student-centered learning within communities of inquiry to include business and industry	→	→	→
5. Support the teacher's and librarian's use of evolving technologies for greater levels of collaboration, inquiry, analysis, creativity and content production.	→	→	→
6. Provide students with opportunities to work collaboratively in communities of inquiry to solve problems and communicate with a variety of audiences	→	→	→
7. Improve academic achievement across the curriculum through technology	→	→	→
8. Integrate technology into teaching and learning in all areas			
9. Integrate ongoing planning for technology into all classrooms and libraries on each campus in the district, and encourage participation of the community	→	→	→
10. Ensure accessibility by all students to technology-based instruction and to adaptive/assistive devices, training and support, as appropriate	→	→	→
11. Use student performance data and curriculum materials that are provided and managed electronically in instructional planning	→	→	→
12. Pilot assessment of models for reporting the extent to which students meet the technology proficiencies in the TEKS	→	→	→
13. Incorporate technology use into the teacher and librarian appraisal system, where appropriate	→	→	→
14. Assess and report the extent to which students meet technology proficiencies in the TEKS in the annual *Texas STaR Chart* Campus submission.	→	→	→
15. Incorporate expectations for educators' and students' technology proficiencies into the *Texas STaR Chart*, Focus Areas and Levels of Progress. Use the Texas School Library Standards to help students become information literate	→	→	→

Local continued

Recommendations to Local Education Agencies	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
16. Use distance learning and digital content services for expanding curricular offerings and meeting the needs of all students	→	→	→
17. Use distance learning and digital content services to provide educational services and information about education to parents and other community members		→	→
18. Provide on-demand access by staff and students to the best available technologies, including digital content in classrooms, libraries, and other appropriate sites	→	→	→
19. Identify and communicate the best technology practices to the community	→	→	→
20. Provide incentives for using new effective models, tools, and resources for teaching and learning	→	→	→
21. Provide parents and other community members access to the infrastructure for educational resources	→	→	→

Recommendations to Communities	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Use existing and emerging networks for educational services and information	→	→	→
2. Participate in establishing and updating expectations for students' and educators' technology proficiencies and in developing effective reporting and communications systems	→	→	→
3. Participate in teaching and learning opportunities and in the use of other educational resources available through the telecommunications infrastructure	→	→	→

Higher Education

Recommendations to Institutions of Higher Education	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Provide professional development to faculty engaged in educator preparation in integrating technology into teaching and learning	→	→	→
2. Demonstrate the best practices and models of technology integration into teaching and learning and make them available for viewing by schools	→	→	→
3. Expand collaboration between public schools and educator preparation entities	→	→	→
4. Participate in partnerships with schools to pursue grant opportunities	→	→	→
5. Participate in partnerships with the private sector and public entities to develop and provide instructional resources and services	→	→	→
6. Deliver professional development and degree programs for staff and dual credit for students through distance learning and distributed learning	→	→	→
7. Share library and information resources with schools and communities	→	→	→

Private Sector

Recommendations to the Private Sector	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Collaborate with schools in establishing and updating expectations for technology proficiencies in the TEKS for students	→	→	→
2. Collaborate with schools on establishing and updating expectations for technology proficiencies for educators	→	→	→
3. Participate in interoperable partnerships to develop and provide products, materials, including Web based updateable software, and services that ensure rights and cost efficiencies for schools and that ensure Texas' participation in content development	→	→	→
4. Invite educators, students, and parents to experience technology's role in the workplace	→	→	→
5. Provide technology-based work experience for educators and students through internships and other means	→	→	→
6. Support communication of the policies and recommendations of the *Long-Range Plan for Technology 1996-2010*	→	→	→

Educator Preparation and Development

Executive Summary

Research on successful professional development reveals that all members of an institution must share a common understanding of the goals and knowledge base in order for the institution to improve. As a result, the *Long-Range Plan for Technology, 1996-2010* addresses the professional development needs not only of teachers but also of all the members of the professional education community. The plan also addresses the professional development needs of faculty at the university level, particularly those involved in preservice educator preparation.

Continuous Professional Development is a Priority

Continuous professional development for educators in using technology in teaching and learning must be a priority. In addition, technology can and should be used to provide equitable access to quality, standards-based professional development. All those engaged in the delivery of professional development must possess and demonstrate the capacity to use technologies effectively.

To use technologies effectively, all educators must continually:

- learn about current educational technologies and their applications,
- participate in professional development that mirrors contemporary learning principles
- reflect on the appropriate role technology plays in supporting learner-centered instruction
- integrate educational technologies throughout the entire teacher preparation program
- model the best practices regarding the effective integration of educational technology throughout the curriculum
- use technology to increase their knowledge, to conduct research, to seek expert advice, and to collaborate
- integrate the Technology Applications Texas Essential Knowledge and Skills (TEKS) into the curriculum

The State Board for Educator Certification is asked to establish requirements for both educator preparation and renewal. These requirements include performance-based assessments in technology proficiencies.

Just-in-Time Professional Development

When they have a concern about the integration of teaching, learning, and technology, educators need immediate access to relevant, high-quality professional development and technical support both during and outside the instructional day. This type of professional development is known as "just-in-time" rather than "just-in-case" assistance.

Just-in-time professional development rejects the standard of often irrelevant or ill-timed professional development presented just in case one ever needs it. It replaces this with a new standard for professional development, one that is on demand and just in time for effective use. All educators should have cost-effective access to high-quality information regardless of geographic location or time of day. Technology makes this improvement feasible.

State, regional, and local institutions as well as the private sector all play a role in developing, facilitating, and providing different models of professional development. Significant coordination among these entities and allocation of resources is necessary to guide the educator workforce in integrating technologies into all facets of teaching and learning, management, and planning.

The actions and recommendations in this document's Educator Preparation and Development section set the stage to provide educators with the technology proficiencies, cited in the Teaching and Learning section. These proficiencies must become an integral part of the teaching and learning process.

Actions and Recommendations

State

Actions by the Texas Education Agency	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Identify priorities for professional development activities	→		
2. Establish, disseminate, and update minimum standards for staff development in technology (TEC 21.451)	→		
3. Facilitate and provide access to professional development activities, including use of digital content services, (online databases, Web-based instruction) and assistive technology devices (Web readers, touch screens) and services (evaluation, training, curriculum intergration)	→	→	
4. Establish policies that facilitate educator professional development credit for distance learning, distributed learning, and digital content services	→	→	
5. Identify and provide criteria for professional development for the integration of Technology Applications TEKS into all other TEKS	→	→	
6. Support accountability measures in the educator appraisal systems for expectations of technology proficiencies by teachers, principals, and administrators	→	→	
7. Use state-developed assessment instruments for gathering educator preparation data concerning the integration of technology into local school districts; for example, the *Texas STaR Chart*		→	→

Recommendations to the State Board for Educator Certification	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Design, implement, and update requirements for relevant educator preparation and development in integrating technology into teaching and learning, instructional management, professional development, and administration	→		
2. Continue the inclusion of standards for technology proficiencies into educator renewal requirements	→		
3. Establish and implement requirements for credentials that recognize a Master Technology Teacher and other Technology Applications certifications (all levels)	→		
4. Develop a performance-based assessment for Technology Applications certifications	→	→	

State continued

Recommendations to the Texas Higher Education Coordinating Board	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Establish and implement continuing education requirements for college and university faculty in the integration of technology, teaching, and learning	→	→	
2. Model administrative leadership in the use of technology tools	→	→	→
3. Implement SBEC proficiencies into preservice teacher preparation	→		

Regional

Recommendations to Regional Education Service Centers	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Establish and maintain partnerships in support of local technology initiatives	→	→	→
2. Assist districts in the vertical alignment of all Technology Applications Texas Essential Knowledge and Skills (TEKS)	→	→	
3. Offer professional development to educators on the integration of Technology Applications across all other TEKS	→	→	→
4. Offer professional development to educators by distance learning, distributed learning, and through digital content services	→	→	→
5. Design, implement, and assess professional development programs for educators on technology integration into teaching and learning, instructional management, and administration	→	→	→
6. Assist districts in providing professional development using standards set by the State Board of Educator Certification	→	→	→
7. Include creation of student-centered multimedia projects in educator professional development content	→	→	→
8. Use a variety of research-based professional development models for educator learning.	→	→	→
9. Design and implement research-based professional development for local personnel responsible for technical support	→	→	→
10. Model administrative leadership in the use of technology tools throughout the ESC organization	→	→	→

Local

Recommendations to Local Education Agencies	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Allocate at least 30 percent of technology budget for professional development	→	→	→
2. Vertically align the Technology Application Texas Essential Knowledge and Skills (TEKS)	→	→	→
3. Provide professional development for integrating Technology Applications into all other TEKS	→	→	→
4. Include creation of core curriculum, student-centered, multimedia projects in educator professional development content	→	→	→
5. Provide opportunities, incentives, and support for educators to develop model practices in the integration of teaching, learning, and technology	→	→	→
6. Support flexible access to the library so that research skills using technology can be used at point of need	→	→	→
7. Provide training in data examination and analysis through technology to support sound decision-making	→	→	→
8. Provide and assess professional development for integrating technology into teaching and learning, instructional management, and administration	→	→	→
9. Provide professional development using standards set by the State Board of Educator Certification	→	→	→
10. Model administrative leadership in the support of teacher-librarian collaboration and the use of technology tools	→	→	→
11. Offer professional development to educators by distance learning, distributed learning, and through digital content services	→	→	→
12. Use a variety of professional development models including distributed, just-in-time* professional development for all educators	→	→	→
13. Integrate technology planning into all classroom, library, campus, and district plans	→	→	→
14. Include communities in the planning for the integration of teaching, learning, and technology	→	→	→

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*Just-in-time professional development refers to professional development resources that are available on call through access to formal instruction, experts online, intelligent agents, and other resources. Intelligent agents are machine-based entities that can carry out simple instructions from a user.

Higher Education

Recommendations to Institutions of Higher Education	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Design and implement educator preparation and development programs that meet state certification standards and expectations for technology proficiencies for educators to support the integration of teaching, learning, and technology	→	→	→
2. Support field-based educator preparation and development and the integration of teaching, learning, and technology.	→	→	→
3. Provide professional development to faculty engaged in educator preparation in integrating technology into teaching and learning, instructional management, professional development, and administration	→	→	→
4. Model administrative leadership in the use of technology tools	→	→	→

Private Sector

Recommendations to the Private Sector	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Provide opportunities to educators for professional development and access to technology systems	→	→	→
2. Collaborate with educators in the development of products and services to meet schools' technology needs	→	→	→

Administration and Support Services

Executive Summary

Leadership is the most critical factor in successful system change. In filling the role of leadership, a successful administrator assumes the role of technology leader. As technology leader, our administrators must create a shared vision, and encourage and sustain the appropriate integration of technology. Effective administrators must also use modern information technology tools to embrace accountability and hence use data for sound decision-making and continual assessment of effective technology for improving student learning.

Technology used to build a learning community throughout a school district constitutes significant system change. Tools, communication, staff roles, instructional resources, and students' work all change in a technology-rich environment. Technology systems provide tools for many purposes. The actions and recommendations for teaching and learning and those for educator preparation and development focus on those purposes that are critical for learners—whether the learners are students, in a classroom or at a distant site, or teachers. In their roles as seekers and providers of knowledge, students and teachers alike rely on technologies for functions such as communications, research, analysis, and presentation. Effective administrators must also lead the transformation in teaching, learning, professional development, and technology infrastructure In addition, budgets and funding should also provide for appropriate technical support and instructional and administrative staffing.

Various Administrative Functions:

Research shows that the critical element for creating and sustaining change is in the role of leadership. The effective administrator is the technology leader who creates a shared vision for the appropriate integration of technology. Leadership in technology is critical for sustaining a technology program. Leadership is also necessary to ensure that data is used for sound decision making. An effective administrator provides leadership for continual assessment of effective technology for instruction and for improving student learning.

Teachers, collaborating with library staff, provide a team effort from having access to non-secure information, made readily available electronically, about their students' strengths and needs. Administrative and support services staff in school districts require sophisticated technological tools to accomplish their functions. Staff includes those responsible for keeping track of information such as student attendance, participation in special programs, student performance, the educational progress of mobile students, expenditures from multiple sources of funds, and local accountability information.

Sharing the Challenge of Technology:

The effective administrator is the technology leader. Leadership in technology is critical for sustaining a technology program. The requirements of the Academic Excellence Indicator System (AEIS), in particular, challenge administrative staff to take full advantage of technology tools for data gathering, analysis, and distribution. It is imperative that administrative and support staff have access to both the tools and the professional development needed to effectively and efficiently learn to use these tools.

The Texas Education Agency's Public Access Initiative, embodied in the Actions and Recommendations in this section, seeks to strengthen and standardize the data produced by districts and to make these data available, not only to educators and administrative decision makers, but also to parents and other constituents of the public education system. As the technological infrastructure is established, this technology will improve the quality and timeliness of data acquisition and transmittal. The redesign of PEIMS will make information more accessible to and useful for both instructional and noninstructional personnel.

Meeting the Challenge:

All state agencies, regional education service centers, schools, communities, institutions of higher education, and the private sector, will promote shared leadership in vision and planning for the effective integration of technology, in teaching and learning, and school operations.

The administrator leads the development of a vision and leads the effort for a strategic technology plan in their school district including appropriate integration of technology in all content areas, with the continual assessment of effective implementation of technology. Budgets and funding should also provide for appropriate technical support and instructional and administrative staffing. The administrator provides leadership for maintaining partnerships and communications, with parents, businesses, and the community to support technology use within the district.

Actions and Recommendations

State

Actions by the Texas Education Agency

	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Provide leadership and vision in planning for the effective integration of technology in teaching and learning and school operations	→		
2. Ensure, through technology, the availability of technical assistance programs to promote efficiency in noninstructional support services	→		
3. Provide leadership in research and the examination and analysis of data to support sound decision-making	→		
4. Develop and implement information access and confidentiality policies	→		
5. Provide open access to nonsecure data files	→		
6. Foster innovative use of technology to assess, document, and report student progress			
7. Establish electronic student achievement records statewide for placement and for documenting progress, to better serve our mobile society	→		
8. Design and implement education initiatives with business and industry technology partnerships	→		

Recommendations to the Texas Higher Education Coordinating Board

	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Reduce barriers to instructional services delivered by technology through improved coordination with the Texas Education Agency, institutions of higher education, and other entities	→		

Regional

Recommendations to Regional Education Service Centers	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Provide administrators training and technical assistance for campus and district technology planning and integration strategies	→	→	→
2. Provide administrators training and technical assistance that support sound decision-making through the examination and analysis of data	→	→	→
3. Promote district awareness of technology resources that assist personnel in effectively planning for school improvement	→	→	→
4. Provide district administrators technical assistance and support services in selecting, securing, installing, and using efficient and effective technology systems	→	→	→
5. Provide district personnel technical assistance and support in revising and implementing PEIMS (Public Education Information Management System)	→		
6. Conduct district training programs in how to use technology resources in all aspects of school operations	→	→	→
7. Support the efficient district integration of community support services	→	→	→
8. Assist in coordination of state, school, and community information resources	→	→	→
9. Maintain a capable and client-centered pool of expertise for supporting schools, districts, and individual staff, integrating technology into instructional management and administration	→	→	→

Local

Recommendations to Local Education Agencies	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Integrate planning for technology into all classroom, library, campus, and district planning	→		
2. Integrate the examination and analysis of data to support sound decision-making focused on student success	→		
3. Integrate technology into instructional management and administration	→		
4. Initiate and implement policies regarding parental and community access to personnel and other nonsecured data through technology	→		
5. Expand community access to school information through technology	→		
6. Establish policies to encourage expanded use of school facilities, including the library facility	→		
7. Coordinate school and community resources for technology	→		
8. Maintain client-centered district technical assistance and support for the integration of technology into teaching and learning and school operations	→		

Recommendations to Communities	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Access educational information resources through technology	→		

Private Sector

Recommendations to the Private Sector	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Coordinate, develop and implement business and industry technology partnership strategies with schools, parents and communities	→		

Infrastructure for Technology

Executive Summary

The recent national No Child Left Behind Act of 2001 encourages initiatives involving public-private partnerships that are designed to increase access to technology. Legislation promotes the implementation and support of a comprehensive system that effectively uses technology in elementary and secondary schools to improve student academic achievement. One outcome will be an effective educational technology infrastructure that expands access to technology for all students and teachers. As schools improve their infrastructure (adding computers in the classroom, installing videoconferencing for learning and professional development, as well as pursuing/purchasing online educator resources) the maintenance of a state-of-the-art school system is fundamental and paramount to their success. Electronic networks and other innovative methods, such as distance learning, will deliver specialized or rigorous academic courses and curricula for students in areas not otherwise having access to such courses and curricula, particularly in geographically isolated regions.

The equalization of resources–Internet access, adequate bandwidth, and equitable access for educators and students–will continue to be a challenge that must be addressed at every level of responsibility. The measure of success will be the provision of appropriate access serving identified needs.

Components of an Infrastructure for Technology

The infrastructure of a school is the critical element of support for all four areas of the Long-Range Plan for Technology. Often called "boxes and wires," this hardware—and the connecting peripherals such as the network connections and the resulting communications capabilities—enable the system to function properly. The infrastructure provides the foundation for software applications, computer programs such as graphics or spreadsheets, and the TEKS content.

While school connectivity presents tremendous challenges, implementing connectivity offers educators opportunities to collaborate, to improve communications with the community, and to prepare students with technology skills.

Establishing a Comprehensive System

To achieve compatible connectivity for all schools, it is the responsibility of the Texas Education Agency to first take a leadership role in establishing the comprehensive state technology system. This system upholds and makes possible communications among students and educators. The data distribution and analysis, the just-in-time professional development, and use of best practices and other key factors conveyed in this long-range plan for technology are discussed in the previous sections.

Coordination with other state agencies, regional and local education agencies, and the private sector will be of paramount importance in determining connectivity and the technical, functional, and other standards for this system. Coordination will also be needed to ensure that access will be equitable statewide. Concomitant with this effort will be the actions necessary to ensure that students and educators acquire proficiencies needed to take advantage of the technology infrastructure. As part of long-range planning the state will need to develop policies regarding public access to the data and to the educational resources available through the infrastructure.

The Regional and Local Roles

Regional education service centers should take responsibility for participating in planning and supporting the technology infrastructure. At the local level school districts need to determine the measures that will help them acquire, maintain and keep the technology up to date. Local districts will benefit most by implementing and maintaining the suggested ratios of workstations to students and educators and by determining how best to deploy the workstations to ensure universal accessibility.

Many Roles in Technology and Education

It will be incumbent on institutions of higher education to prepare preservice educators with the skills needed to integrate the technology infrastructure into teaching and learning, instructional management, professional development, and administration.

The private sector—the developers and vendors of the technology systems, the instructional materials, and the training and other services—is asked to work closely with the public education system to provide products appropriate for students, educators, and administrators at favorable prices.

A comprehensive and reliable infrastructure will promote parent and family involvement in education and communication among students, parents, teachers, principals, and administrators. Finally, as conveyed in the previous sections, entire communities will benefit by seeking access to the wealth of information and services that will be available on the networks.

Challenges clearly remain. One of the greatest is ensuring that each student is equipped to flourish within a wide array of learning and work communities. The issues of ongoing support, equity for all, and growth to incorporate evolving technologies will test our true commitment to ensure that connectivity reaches all instructional and professional areas, and that infrastructure capacity supports promising practices in instruction, school leadership, and operation.

The challenges include the endeavor of being certain that each student is technologically and information literate and functions comfortably with a wide array of learning and work communities. The challenge of continuing support, equity for all, and the vision to incorporate evolving technologies will require our best knowledge and commitment to the place of technology as a part of the learning process. The challenge of connectivity must uphold all instructional and professional areas, and support promising practices for instruction, school leadership, educational collaboration, and future activities.

Actions and Recommendations

State

Actions by the Texas Education Agency	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Continue to take a leadership role in the development and implementation of a comprehensive state technology system providing voice, video and data capabilities and ensuring equitable access by all districts, campuses and communities	→	→	→
2. Maintain a coordinating mechanism with the Department of Information Resources, Telecommunications Infrastructure Fund Board, Texas Building and Procurement Commission, State Library, and other state agencies and associations, as appropriate, to provide a telecommunications backbone that provides high speed and increased bandwidth for appropriate applications	→	→	→
3. Review and promote compatibility and capacity guidelines and standards for technology and infrastructure in schools and for systems that support it, including common data standards, to ensure interoperability	→	→	→
4. Provide means to support student and staff collaboration, including access, connectivity, information services, training, and support	→	→	
5. Ensure that educator and student workstation* ratios in classrooms and libraries provide on-demand access to the best available technologies	→	→	→
6. Provide state funding of regional education service centers to support the establishment and on-going operation of regional networks, and facilitate related training to districts	→	→	→
7. Define local technology infrastructure factors, including ratios of educators and students to workstations, for inclusion in the Academic Excellence Indicator System (AEIS)	→	→	→
8. Provide leadership for replacement or repositioning of obsolete technology	→	→	→
9. Modify facilities technology standards to promote future demands for access	→	→	→

Recommendations to Other State Agencies	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Participate in the development and implementation of a comprehensive state technology system with voice, video and data capabilities	→	→	→
2. Establish full universal connectivity with state technical standards	→	→	→

Regional

Recommendations to Regional Education Service Centers	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Design, install, and maintain a technology and telecommunications infrastructure for communications and service to ensure equitable access for all districts, campuses and communities	→	→	→
2. Provide a forum for regional collaboration	→	→	→
3. Offer technical assistance to schools for technology infrastructure planning, and support statewide initiatives, such as the Texas Library Connection, for integrating technology into all campus and district plans	→	→	→

Local

Recommendations to Local Education Agencies	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Integrate planning for technology into all classrooms, libraries, and campus and district planning (TEC 11.252)	→	→	→
2. Design, install, and maintain a technology and telecommunications infrastructure for communications and service to ensure equitable access for all campuses and the community	→	→	→
3. Investigate multiple financial arrangements for securing and maintaining workstations, infrastructure and other technologies	→	→	→
4. Meet the technology equipment target of a student-to-workstation* ratio of 4:1	→	→	
5. Meet the technology equipment target of a student-to-workstation* ratio of 1:1 to ensure that access is available as appropriate. Provide on-demand access for every student to workstations* and/or the best available technologies.		→	→
6. Meet the technology equipment target of all professional educational staff to a workstation ratio of 1:1 to ensure that access is available as appropriate. Provide a dedicated workstation* to every educator	→	→	
7. Provide access to appropriately configured workstations and computer workstations to all students and staff in libraries, school offices, and in other work areas, ensuring accessibility for disabled students and staff as required by the ADA	→	→	→

*(Definition of workstation: workstation is an appropriate technology tool including, desktop or laptop computer, but not limited to, PDA, laptop, Internet device or other emerging technologygies)

Local continued

Recommendations to Local Education Agencies	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
8. Integrate planning for technology into all classrooms, libraries, campus and district planning (TEC 11.252)	→		
9. Build community support through collaborative planning, education, public information, and other means	→		
10. Continue to provide high-speed access to the Internet for students and staff	→		
11. Seek strategic partnerships with public and private entities	→		
12. Seek external funding for the technology infrastructure	→		
13. Commit to participate in the comprehensive state technology system	→		
14. Replace or reposition obsolete technology and infrastructure on a scheduled basis to ensure maximum efficiency and use	→		
15. Provide and maintain an infrastructure for communications with parents and community members, including access to school news, educational resources, data, and personnel	→		

Recommendations to Communities	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Develop parent and community access to existing and emerging networks to communicate with schools	→		
2. Establish strategic partnerships with local education agencies	→		

Higher Education

Recommendations to Institutions of Higher Education	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Acquire and maintain current technology for educator preparation facilities	→		
2. Provide infrastructure that meets or exceeds national recommendations for infrastructure and faculty proficiencies with technology in order to provide students access to distance learning and other information resources.	→		
3. Establish conferencing systems, compatible with schools' systems, that meet state public school technical guidelines and standards	→		
4. Establish strategic partnerships with regional education service centers and local education agencies	→		

Private Sector

Recommendations to the Private Sector	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Provide favorable pricing and services to schools to support infrastructure	→		
2. Establish conferencing systems, compatible with schools' systems, that meet state public school technical guidelines and standards	→		
3. Develop strategic partnerships with local education agencies schools to foster infrastructure support including, promoting interoperability and web-based services that eliminate the need for large technical support staffs	→		

Other Groups

Recommendations to Other Groups	Short Term 2003-2004	Mid Term 2005-2007	Long Term 2008-2010
1. Access existing and emerging networks to communicate with schools, libraries, medical facilities, agencies, and other sources of information	→		

2002 Progress Report on the *Long-Range Plan for Technology, 1996-2010*

Executive Summary

When looking at everything around us, two years doesn't seem like much time. Two years ago, many of us had the same jobs, the same cars, and lived in places that look pretty much as they do now. Two years isn't enough time to see the major changes that can take place...except when we look at technology.

With technology, two years can be the lifespan of a version of software or the latest modem connection speed. Ideas that seemed impossibly fresh and challenging two years ago are part of our everyday experience, while resources that were out of reach have now earned a place in our offices, classrooms, and libraries. A lot has changed in Texas schools regarding the use of technology over the past two years.

This progress report of the *Long-Range Plan for Technology, 1996-2010* covers the period from September 1, 2000, through August 31, 2002. The original *Long-Range Plan for Technology* came into being in 1985, when new legislation charged the State Board of Education with developing and adopting a plan to guide Texas' progress in using technology in schools. The *Long-Range Plan for Technology, 1988-2000* served as a blueprint for providing students and teachers with tools to gain the knowledge and skills required for teaching, learning, and working in the 21st century. The plan established technology as an essential priority in achieving equitable access to information and resources for all Texas schools.

In 1995, changes in legislation, developments in technology, changing expectations of business and industry, higher education changes, and community needs dictated that the plan be updated. The Commissioner of Education appointed a task force to re-examine the plan, and the resulting *Long-Range Plan for Technology, 1996-2010* was adopted by the State Board of Education and presented to the Texas Legislature in 1996.

The *Long-Range Plan for Technology, 1996-2010* made requests of the Legislature, delineated actions the Texas Education Agency should undertake, and made recommendations to other entities—state agencies, regional education service centers (ESC's), local school districts, institutions of higher education, communities and the private sector.

In 2001, it became evident that it was necessary to conduct a midpoint review and adjustment of the *Long-Range Plan for Technology, 1996-2010* to ensure recommendations remain appropriate, determine if new recommendations are warranted, and create benchmarks or indicators that will let us know where we are as a state and as individual schools and districts in achieving the targets addressed in the *Long-Range Plan for Technology, 1996-2010.*

The Educational Technology Advisory Committee (ETAC), in collaboration with the Educational Technology Division of the TEA, developed the 2002 Update to the *Long-Range Plan for Technology, 1996-2010.* The Update was posted on the TEA web site for public comment and is provided at the beginning of this publication.

The current *2002 Update to the Long-Range Plan for Technology, 1996-2010* includes four sections:

- Teaching and Learning
- Educator Preparation and Development
- Administration and Support Services
- Infrastructure for Technology

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The Teaching and Learning section of this report addresses the need for instructionally sound technology-based materials to promote student learning. It also addresses teacher access to educational accountability data and other resources to help teachers carry out successful planning and instruction.

Educator Preparation and Development examines efforts and initiatives to prepare preservice and inservice teachers and other instructional staff members for using technology most effectively in our schools.

Administration and Support Services describes the efforts undertaken to work with administrators, educators, and other school staff members to deliver and streamline functions these individuals need to do their jobs efficiently and effectively. It also focuses on the importance of continual planning and support essential to maintain effective technology systems.

None of these efforts can be carried out without the appropriate equipment, connectivity, and people. Infrastructure for Technology addresses gains made in these areas.

Although these four sections stand alone, they cannot be separated. Some common concepts are threaded throughout, as well as common resources that meet goals in each of the sections. The repeated themes and resources emphasize how necessary a cohesive, integrated technology effort is to the continual improvement of our education system.

Significant progress has been made in reaching the goals outlined in the *Long-Range Plan for Technology, 1996-2010.* We see the Texas Essential Knowledge and Skills curriculum (TEKS), which became effective September 1, 1998, guiding districts, campuses, and educators as they make the decisions about how and when students will learn. With Technology Applications as a significant part of the TEKS—woven throughout the expectations for what students should know and be able to do—we find technological advances taking place at every grade, in every classroom. Students are using e-mail, the Web, and multimedia presentations to complete assignments. Graduates are leaving high school with at least one Technology Applications credit completed in courses such as Digital Graphics/Animation and Web Mastering. Educators are getting the support they need to continue as learners themselves, finding assistance from nontraditional sources such as distance learning available through satellite, videoconferencing, or the Internet.

Educators—both preservice and inservice— are finding more support for technology than ever before. New Examinations for the Certification of Educators (ExCETs) in Texas will ensure that our children's teachers are better prepared for today's classrooms. As expectations for our students' learning have been raised with the implementation of the TEKS, expectations for our teachers will be raised with these examinations and mandatory standards for Technology Applications knowledge and skills. In addition, teachers and librarians are more connected to the Web as well, finding resources in the Texas Beginning Educator Support System, Centers for Educator Development, and the Texas Library Connection (TLC). In addition, the Texas Education Telecommunications Network (TETN) connects "Lone Star librarians"—those who fill the lone library position in a district—to offer them training and communications opportunities they never had before.

The use of technology for specific needs of administrative and support services staff members continues to evolve. Administrative use of technology in schools and districts can save tremendous resources. We see new and revised ways to use business applications online, such as the enhanced accessibility of the Academic Excellence Indicator System (AEIS), the Public Education Information Management System (PEIMS), and the AskTED function on the Texas Education Agency web site, as well as Educational Materials Online (E-MAT), which has offered the ability to order textbooks online since September 1998. Up-to-date systems for technical support are in place, ensuring best use of the TETN and Texas School Telecommunications Access Resource (T-STAR) with a minimum of down-time. Funding from the Technology Allotment, TIF and Library Supplemental Funds, as well as federal sources also helps brings goals within reach.

The state continues to put into place a comprehensive technology system with voice, video, and data capabilities. The Texas Education Agency's strategic plan to meet the *Long-Range Plan for Technology, 1996-2010* goals—the Public Access Initiative—has shown significant progress over the past two years. The new Public Education Data Warehouse provides, in a clearinghouse format, searchable key information education stakeholders need about student performance and school finances, among other data. The TETN and T-STAR systems, recently upgraded, continue to save money on district travel and to deliver "just in time" professional development. In addition, the human infrastructure that supports the technology is growing.

Now, six years into the current *Long-Range Plan for Technology, 1996-2010*, we can see how the development and implementation of technology in our schools has reached an unprecedented level of sophistication. Teachers at all levels are becoming familiar with technology, using technology for professional development, and discovering how technology may best help their students learn. Administrators, librarians, and other school staff members are saving time, money and resources with business applications, support, and professional development of their own. Districts are seeing an equalization of resources between smaller, rural areas and larger, urban communities. Education organizations and other entities are able to make a bigger and more consistent impact by using technology to deliver resources to districts and campuses.

Perhaps the most important aspect of the impact of technology is that students are using technology every day, becoming proficient and comfortable with the tools that have become so widely established in recent years and will remain critical well into this century and beyond.

According to data collected during the 2001-2002 Benchmark Year of the *Texas STaR Chart*, the statewide average of districts reporting in all four areas indicates that as a state we are at Developing Tech. The *Texas STaR Chart* is organized into the four key areas of the *Long-Range Plan for Technology, 1996-2010*. Each key area is divided into Focus items and a rating of Early Tech, Developing Tech, Advanced Tech and Target Tech is calculated based on the information in each Focus item. Additional information on the *Texas STaR Chart* is available at: http://www.tea.state.tx.us/technology/etac/campus_txstar/

Current Status of the *Long-Range Plan for Technology, 1996-2010*

Authorized Under Texas Education Code Chapter 32

"To prepare students for the 21st century, it is the policy of this state that a superior education should be available to all students under a thorough and efficient system of public education. Educational resources shall be devoted to the maximum extent possible to the instruction of students. To accomplish those purposes, public education must use, in a comprehensive manner, appropriate, accessible technology in all aspects of instruction, administration, and communication."

Prepared by the Division of Educational Technology

Texas Education Agency
1701 North Congress Avenue
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September 2002

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Current Status of the Long-Range Plan for Technology
Authorized Under Texas Education Code, Chapter 32

States across the nation continue to look to Texas as a leader in educational technology. A visionary plan and an impressive array of technology initiatives earned Texas this leadership position. Technology is a powerful tool that can transform the educational experience. Texas schools have a wealth of technology resources from which to choose to meet their local education goals and to provide all students with access to quality educational opportunities.

Initiative

Development of Long-Range Plan
TEC 14.021 & TEC 32.001

Description

In 1985, in accordance with State legislation, the State Board of Education (SBOE) developed and adopted a long-range plan for the use of technology in education. Texas was one of the first states in the nation to adopt such a visionary plan. The original *Long-Range Plan for Technology* (LRPT) covered the years 1988-2000. In response to changes in legislation and business and industry, as well as developments in technology, a new plan was adopted by the SBOE in 1996. The *Long-Range Plan for Technology, 1996-2010* charts the course for providing all Texas students with access to quality educational opportunities through the use of technology. As we move into the 21st century, evolving technology plays a critical role in all aspects of society. The *Long-Range Plan for Technology, 1996-2010* serves as the State's blueprint for putting cost-effective tools to gain the knowledge and skills required for teaching, learning, and working in the 21st century into the hands of Texas students, teachers, librarians, and administrators. This plan clearly establishes technology as an essential priority in ensuring that **all** Texas schools, regardless of their size, geographic location or district wealth have the ability to provide quality educational opportunities.

The Educational Technology Advisory Committee (ETAC), in collaboration with the Educational Technology Division of TEA, developed the *2002 Update to the Long-Range Plan for Technology, 1996-2010*. The Update was posted on the TEA web site for public comment and is provided at the beginning of this publication.

The *2002 Update to the Long-Range Plan for Technology, 1996-2010* mirrors the goals of the new *No Child Left Behind Act of 2001 (NCLB)*.

Purpose

The fundamental goal of the *Long-Range Plan for Technology, 1996-2010* is to enhance students' acquisition of knowledge through technology. Inherent in this priority goal is the conviction that technology, equitably distributed, plays a critical role in addressing economic and other disparities among students and in meeting the needs of students with disabilities.

The technologies addressed in the plan and utilized in Texas schools include computer-based systems, devices for storage and retrieval of massive amounts of information, telecommunications facilities for audio, video, and information sharing and other electronic media devised by the year 2010 that can help meet the instructional and productivity needs of public education.

The goals of the *Long-Range Plan for Technology, 1996-2010* are reflected in the four main area of the plan: Teaching and Learning, Educator Preparation and Development, Administration and Support Services, and Infrastructure for Technology.

The Texas Education Agency (TEA) provides leadership and support in the use of technology through a wide variety of technology initiatives that give Texas students, parents, teachers, administrators, legislators, and business leaders access to the tools, products, and information they need to make decisions, to educate, to plan, and to learn.

Funding Level

Funding for the original *Long-Range Plan for Technology* began in the late 1980's and was appropriated from general revenue. In 1991, the Technology Allotment was authorized with provisions for the commissioner of education to set aside the amount needed for state technology initiatives to implement the *Long-Range Plan for Technology.* In 1995, changes in legislation moved the Technology Allotment from general revenue to the textbook fund. The Telecommunications Infrastructure Fund was created and funds appropriated from that fund for implementation of the *Long-Range Plan for Technology.* Those specific appropriations for the *Long-Range Plan for Technology, 1996-2010* are outlined below. The statewide initiatives funded from each biennial appropriation include the Texas Library Connection, the TETN and T-STAR networks, Technology Demonstration Programs and Education Service Center Technology Preview Centers and Training Programs. Additional initiatives have received targeted separate appropriations or leverage federal funding sources. A number of additional funding sources contribute to the implementation of the *Long-Range Plan for Technology, 1996-2010* at the state, regional and district level.

1996	$15,000,000
1997	$15,000,000
1998	$14,600,000
1999	$14,600,000
2000	$14,600,000
2001	$14,600,000
2002	$14,600,000
2003	$14,600,000

Teaching and Learning

Executive Summary

The traditional model of schooling, with the teacher choosing what is to be learned and then serving as the source of knowledge and with the student acting as the receiver of that knowledge, is not adequate for 21st Century, world-class education. Roles of teacher and learner must change. In the Digital Age the sheer volume of information means that Texas students cannot be passive recipients of instruction; rather, Texas students must become active participants in the learning process. It is vitally important that students know where and how to find content relevant to their needs and know how to be sure their sources are credible. It is important that students gain skills for collaboratively constructing, using, and communicating the knowledge they need for a chosen task, project, or learning pursuit.

Learning and teaching must be different from past traditions. Information and communications technologies empower learners to undertake authentic projects for learning and productivity even in early grades. These technologies make possible collaboration of diverse work and learning groups and provide access to rich resources and expertise previously unavailable. Indeed, these technologies enable us to envision learning and student productivity that extends far beyond the walls of the classroom and far beyond the rigidity of traditional school schedules. Our challenge in teaching and learning is to move traditional learning and teaching from teacher to student, to a system empowering citizens for a global and digital world of information. This transformation is not a simple undertaking, but it is one that must occur if we are to prepare young Texans for their future lives.

Texas has come a long way toward meeting these challenges for the 21st Century. The rigorous content standards outlined in the Technology Applications essential knowledge and skills clearly articulate what students should know and be able to do using technology. The State Board for Educator Certification has adopted standards for what all teachers should know and be able to do using technology and those standards were based on the Technology Applications TEKS for students in grades 6-8. Districts are providing campus technology specialists to assist teachers in meeting these standards and providing rich learning experiences for their students. Students and teachers across our state are demonstrating their understanding of these standards through a wide variety of projects and learning activities. Students have created web pages about the life cycle of the monarch butterfly, collected information about their environment through hand-held computers, discussed world events with students from other countries, and helped senior citizens communicate with family members through e-mail. Schools are helping our students learn how to learn. They are developing skills and habits of learning that will last them a lifetime.

Technology Applications

Technology Applications is a required enrichment curriculum specified in TEC 28.002 that focuses on the teaching, learning, and integration of digital technology skills across the curriculum. "Digital technology" refers to the use of computers and related technologies such as digital cameras, scanners, probes, and handheld digital devices. The Technology Applications curriculum was built on the premise that students acquire Technology Applications knowledge and skills in a continuum beginning at the elementary level and continuing through the secondary level.

Technology Applications standards were developed and adopted for Grades K–12. The TEKS in 19 TAC Chapter 126 describe what students should know and be able to do using technology. The Technology Applications TEKS are divided into four strands for all grade levels: foundations; information acquisition; work in solving problems; and communication. The goal of the Technology Applications TEKS is for students to gain technology-based knowledge and skills and to apply them to all curriculum areas at all grade levels. Technology Applications TEKS are divided into grade clusters for Grades K–2, 3–5, and 6–8, and courses for Grades 9–12. Students should demonstrate proficiency with the TEKS before they exit the benchmark Grades of 2, 5, and 8.

These "technology literacy" student standards align with the requirements of the *No Child Left Behind Act of 2001* (Title II, Part D Enhancing Education through Technology) to ensure that students are "technology literate by the eighth grade." Rigorous state curriculum standards in Technology Applications specify student expectations for the "technology literate" eighth-grader in Texas. While the Technology Applications TEKS are specific to technology, it is expected that the TEKS at Grades K–8 are not taught in isolation but are the proficiencies necessary for integrating technology into the foundation and enrichment curriculum.

Technology Applications TEKS continue to be applied across the curriculum in Grades 9–12. In addition, they are the prerequisites for eight high school courses: Computer Science I, Computer Science II, Desktop Publishing, Digital Graphics/ Animation, Multimedia, Video Technology, Web Mastering, and Independent Study in Technology Applications. The courses offer opportunities for in-depth study of technology at the high school level. They differ from technology courses that focus primarily on gaining technical skills such as computer repair, networking, and understanding the "boxes and wires." Instead, the Technology Applications courses are designed to prepare students with a background for whatever they may choose to do today as well as in their future using multiple technology applications for a wide variety of learning purposes.

In addition to the TEKS, Prekindergarten Guidelines for Technology Applications were made available to schools in early 2000. They communicate what three and four-year-old students should know and be able to do using technology.

Curriculum Requirements

Districts must ensure that sufficient time is provided for teachers to teach and for students to learn the essential knowledge and skills in technology applications for Grades K-12. Specific curriculum requirements for this area are specified in 19 TAC Chapter 74. The State Board of Education clarified the Chapter 74 curriculum rules related to Technology Applications at the high school level. Districts must offer at least four of the Technology Applications courses in 19 TAC Chapter 126. This clarification became effective September 1, 2001. There are multiple avenues of offering the Technology Applications courses including distance learning. Many schools have taken advantage of dual credit/concurrent enrollment in colleges and universities to provide instruction in the courses. The results of these efforts have been to make it possible to teach the Technology Applications courses when it may not have been possible in other ways, especially for small, rural schools.

All high school graduates are required to have one technology application graduation credit under all graduation plans. The SBOE approved courses to count for the Technology Applications graduation credit. Students who take any of the eight courses in Technology Applications TEKS, Chapter 126 receive this credit. In addition, there are courses in Career and Technology Education that students can take to earn this credit.

Technology Applications Web Site

The Technology Applications web site was developed to provide official information and resources for implementing the Technology Applications curriculum. It includes information about the Technology Applications curriculum, TEKS, graduation credit, professional development opportunities, and other resources. An online brochure developed in collaboration among the TEA Educational Technology Division and the State Board for Educator Certification was posted on the web site to clarify information and provide the latest from both agencies in respect to Technology Applications. The site is found at www.tea.state.tx.us/technology/ta.

NUMBER OF STUDENTS ENROLLED IN TECHNOLOGY APPLICATIONS HIGH SCHOOL COURSES

Course Name	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002
Computer Science	26,318	31,320	29,070	26,645	26,136
Desktop Publishing	271	3,125	4,907	7,495	10,044
Digital Graphics/Animation	20	1,405	2,401	3,892	5,333
Multimedia	142	4,649	5,687	6,398	7,882
Video Technology	54	789	1,037	2,146	3,247
Web Mastering	46	7,114	11,050	16,176	21,785
Independent Study	43	780	1,926	1,683	2,949
Total Courses	26,894	49,182	56,078	64,435	77,376

Source: PEIMS Data

ACCESS TO ESC NETWORKS TO RECEIVE DISTANCE LEARNING

Videoconferencing	1,584 campuses
T-STAR	1,945 campuses
Internet	6,695 campuses

Source: ESC Annual Accountability Report

Technology Applications Center for Educator Development

From 1996 through 2002, the Texas Education Agency funded the Technology Applications Center for Educator Development, a component of the Texas Center for Educational Technology at the University of North Texas, to provide awareness information and resources for implementing the Technology Applications Texas Essential Knowledge and Skills (TEKS). These resources have been useful to schools, especially since there were no adopted instructional materials for the elementary level or for most of the Technology Applications high school courses. The CED developed and compiled resources for the Technology Applications TEKS at Grades K-2, 3-5, 6-8, and 9-12. This included resources for integrating these Technology Applications TEKS across the foundation curriculum areas. Teaching materials for the high school courses were compiled and posted. The CED's resources can be accessed from the TEA Educational Technology web site at www.tea.state.tx.us/technology/ta.

The Call for State Instructional Materials in Proclamations 2000 and 2001

Computer literacy and computer science materials were made available to schools in previous textbook/instructional materials adoptions. However, there are no adopted instructional materials for the elementary level or for the high school courses including Desktop Publishing, Digital Graphics/Animation, Multimedia, Video Technology, and Web Mastering. Schools have used resources and materials provided by the Technology Applications CED as well as other sources to assist with the implementation of Technology Applications.

There have been two calls for Technology Applications instructional material. The call for Technology Applications instructional materials for Grade Prekindergarten was made in Proclamation 2000. These materials, available to classrooms in 2003-04, will provide opportunities for students to begin using computers and related technologies beginning in Prekindergarten. The call for Technology Applications instructional materials for Grades K-12 was made in Proclamation 2001 (Volume I) approved and issued by the State Board of Education in May 2001. Texas is calling for instructional materials to address the Technology Applications TEKS, Chapter 126, for grades K-2, 3-5, 6-8, and the high school courses (Computer Science I, Computer Science II, Desktop Publishing, Digital Graphics/Animation, Multimedia, Video Technology, and Web Mastering). These instructional materials will go through the state's adoption process and will be available to schools in 2004-05. This proclamation is calling for subscription-based submissions that will be reviewed through the state's adoption process. Information on the adoption process and Proclamation 2001 is available on the Textbook Administration web site at www.tea.state.tx.us/Textbooks.

Professional Development for Technology Applications

Technology Applications educator standards and certificates were approved by the State Board for Educator Certification (SBEC). SBEC approved educator certification standards in Technology Applications for all beginning educators. SBEC Technology Applications Standards I-V have been developed for inclusion in SBEC-approved educator preparation programs. They are based on the Technology Applications TEKS for students at grades 6-8. Current educators should strive to meet the SBEC standards in Technology Applications for all beginning educators. The Technology Applications SBEC Standards can be used to assist the state in ensuring that all educators are "technology literate"—as outlined in the *Long-Range Plan for Technology, 1996-2010* and reinforced by the Enhancing Education Through Technology, Title II, Part D.

In addition to SBEC Technology Applications Standards I-V, there are Technology Applications standards and certificate options that include: Technology Applications All Level, Technology Applications 8-12, and Computer Science 8-12. These requirements are included in SBEC Technology Applications Standards VI-XI. In addition, there is a Master Technology Teacher (MTT) All Level. The MTT Certificate is designed to prepare teachers to work with other teachers and with students in order to increase the use of technology in each classroom. Each of these certificates gives Texas teachers options for expanding their digital technology knowledge and skills. Educator preparation programs and alternative certification programs were approved to provide opportunities for educators to meet the Technology Applications standards and receive the new certificates. For additional teacher technology standards and certificate information, visit www.sbec.state.tx.us.

The twenty Education Service Centers (ESCs) in Texas provide planning support, professional development, and technical assistance for districts in meeting the SBEC Technology Applications standards. Through the support of ESCs, district personnel receive hands-on experience and orientation to state of the art technologies, as well as professional development on planning strategies and the integration of technology into the teaching and learning process. Technology workshops, institutes, video-conferencing sessions, online instruction, and other professional development opportunities were offered through each ESC. For more information on services provided by the ESCs, visit www.tea.state.tx.us/technology/esc. In addition, many districts, professional organizations, and businesses provide professional development focusing on Technology Applications.

Other Resources

Several other resources support the Technology Applications TEKS and the integration of technology throughout all curriculum areas. One of the newest resources is the Campus level *Texas STaR Chart*—a needs assessment tool that can help schools meet the recommendations in the Texas *Long-Range Plan for Technology, 1996-2010.* Areas included on the *Texas STaR Chart* are Teaching and Learning, Educator Preparation and Development, Administration and Support Services, and Infrastructure for Technology. One of the specific focus areas on the *Texas STaR Chart* are measures for assessing where schools are in ensuring that their students and teachers are proficient with the Technology Applications standards as well as providing options for students to take courses in this curriculum.

To support the Technology Applications curriculum, there are several funding opportunities. The state-funded technology allotment has provided $30 per student per year since 1992. With this allotment, schools can purchase hardware, software, and training to support the Technology Applications curriculum. In addition, grant opportunities were made available from many sources, including the state Telecommunications Infrastructure Fund (TIF). One of the non-competitive public school grants awarded through TIF during the 2001-02 school year was specifically to support Technology Applications at grades 6-12. Through this grant, over $57 million was awarded to over 500 school districts.

Through the *No Child Left Behind Act of 2001* (Enhancing Education Through Technology, Title II, Part D), Texas will issue TARGET Grants (Technology Applications Readiness Grants for Empowering Texas students and teachers initiative). The grants beginning in January, 2003 will focus on serving high need students by accelerating at the local level Enhancing Education Through Technology of the *No Child Left Behind Act of 2001* and implementation of the recommendations in the *Long-Range Plan for Technology, 1996-2010.* The grants will be used to support the Technology Applications curriculum, especially to assist schools in preparing for the subscription-based instructional materials that will be provided by the state through Proclamation 2001.

TEXAS LIBRARY CONNECTION (TLC)

Senate Bill 5, Rider 61, 73rd Legislature

The Texas Library Connection

Description

The Texas Library Connection (TLC), administered by the Texas Education Agency, provides students, parents and educators access to online information resources that are updated daily and valued at more than $40,000 per campus. Provided at no charge to the campus, these electronic magazines, reference materials, newspapers, maps, and encyclopedias are accessible twenty-four hours a day, seven days a week. They can be accessed from the classroom, the school library, and most importantly, from students' and educators' homes. Students learn how to access and use these online databases as needed for classroom research projects. At the same time that they learn to use them, students are provided instructions including identification and passwords to access the resources from their homes. The Texas Education Agency encourages parents to access and use the resources for their own information needs. To be eligible to access these resources, campuses must meet certain requirements such as having computer access for students in the school library and having a school librarian who is committed to teaching students and staff how to access, evaluate, and use the resources.

Purpose

The Texas Library Connection provides online databases and a unique web portal to Texas students, educators, and parents. Resources include:

- Texas Library Connection Union Catalog provides links to over 5,578 school libraries in the state of Texas. Students may borrow books from more than 50 million items held by those school libraries.
- Magazines, newspapers, primary source materials, and reference databases from The Gale Group's sixteen databases include the full text of more than 2,000 magazines such as National Geographic World, Ranger Rick, Children's Digest, Humpty Dumpty, Reading Teacher, Newsweek, Business Week, Sports Illustrated, Science, Time and newspapers such as New York Times, Houston Chronicle, Austin American Statesman, and The Washington Post. Other Gale databases include the Texas Almanac, a collection of professional journals and information for educators, literary resources, and primary documents and resources.
- Encyclopedia Britannica School Edition provides access to three complete encyclopedias—the original Encyclopedia Britannica, Britannica Student Encyclopedia; and Britannica Elementary Encyclopedia. Britannica also provides the Merriam-Webster's Dictionary and Thesaurus and an Internet guide to hundreds of thousands of sites available on the Web today created and selected by Britannica editors for their educational value and curriculum-based content.
- AGent, a web gateway, allows TLC users to search all the TLC resources including The Gale Group databases, the TLC Union Catalog, Britannica Online School Edition and any other identified web resources with a single search.

The Texas Library Connection Information and Training Center

The Texas Library Connection Information and Training Center (TLCIC) was established at the Region 20 Education Service Center to support this initiative. The TLC Information Center supports the K-12 learning community in the effective use of the electronic resources provided through this statewide resource-sharing project. Smart Starts for the TLC Learner provides e-learning modules for TLC students, parents, teachers, and librarians. The 20 regional Education Service Centers have designated a TLC contact to provide informational and training support for local TLC members. The TLC Information Center also provides training and training support through the materials posted on the TLCIC web site and through scheduled training events. TLC members are encouraged to use the available materials when working with campus students and staff, campus librarians and district TLC/library trainers. The TLCIC also provides enrollment and membership processing services, maintains a database of TLC members, and supports users through the TLC help desk.

For more information, visit www.tea.state.tx.us/technology or the Texas Library Connection Information Center at Education Service Center-Region 20: http://tlcic.esc20.net.

5,031 educators received training on the use of the Texas Library Connection.

Source: ESC Annual Accountability Report

Funding Level

FY 1996	$1,080,000
FY 1997	$ 650,000
FY 1998	$1,800,000*
FY 1999	$1,500,000
FY 2000	$2,500,000
FY 2001	$3,259,999
FY 2002	$3,450,000
FY 2003	$4,000.000

*Includes $500,000 from School Improvement Initiative Funds

Link to Learn

The Link to Learn project, funded by the Telecommunications Infrastructure Fund Board, is designed to ensure that all citizens of Texas communities, especially K-12 students, are provided the information and skills to effectively use information resources available through the common databases of the Texas Library Connection (TLC) provided by TEA and TexShare provided by the Texas State Library and Archives Commission (TSLAC). To accomplish this goal, the Texas Education Agency is coordinating with ESC 12 and ESC 20 to develop training modules and deliver training to public library staff, volunteers, and public school librarians. This staff development project will be implemented through a train-the-trainers model and supported by on-line training modules and materials. Training modules will include orientation to the Texas Essential Knowledge and Skills (TEKS), information acquisition searching strategies, homework assistance strategies, the common databases of TLC and TexShare and Smart Start e-learning modules. The Smart Start modules are linked from the TLC Information Center and are designed for students, parents, teachers, and librarians.

Funding

MOU with TIF	$502,925

School Library Services

Description

School librarians have moved from the role of keeper of the books into a leadership role as they collaborate with teachers and students to demonstrate how research and technology skills are an integral part of an exemplary library program. For students to be information literate they must be engaged in extended, inquiry-based research. School libraries assist students and teachers in developing information literacy. School librarians have been valuable resources in making connections with this information literacy and the required Technology Applications curriculum. Librarians' roles have expanded to include the use of all the resources found in the school library of today: library books, reference resources, access to databases, internet connectivity for computers, multimedia, and information in all formats, electronic as well as print.

The library program supports information literacy/Technology Applications Texas Essential Knowledge and Skills (TEKS) through the following activities:

- Students and staff must understand how to collect and retrieve information.
- All students must develop the ability to manage or use an organizational scheme such as the classification arrangement of library database resources.
- This skill demonstrates that students can interpret, summarize, compare and contrast information.
- Students must make judgments about the quality, relevance, usefulness, or efficiency of the information.
- The creation of new knowledge is demonstrated by adapting, applying, designing, inventing, or authoring information.

Purpose

The TEA Educational Technology Division's Library Services mission is:

1. to build the capacity of Texas school library programs,
2. to provide all students equitable access to resources and assistance in learning to use them, and
3. to enable students to achieve their potential and fully participate now and in the future in the social, economic, and educational opportunities of our state, nation and world.

The Agency administers legislative initiatives directed toward school libraries such as the Texas Library Connection and the Library Supplement. It facilitates the integration of all TEKS, and specifically the Technology Applications TEKS into collaborative teaching and learning sessions. The Agency promotes collaboration with the Texas State Library and Archives Commission. One of their collaborative efforts is to develop state school library standards. For more information about School Libraries, go to www.tea.state.tx.us/technology/libraries.

School Library Standards

School library standards, adopted in 1994, were evaluated in 2002 in a study initiated by the Texas State Library and Archives Commission (TSLAC). The research was completed by an independent research firm, EGS Research, Austin, Texas. The complete study may be seen on the TSLAC web site: www.tsl.state.tx.us/ld/pubs/schlibsurvey/index.html. On the basis of this study, new library standards are in development. The School Library Standards are being revised by a statewide committee composed of building-level librarians, school board members, teachers, university and Regional Education Service Center librarians, members of the public sector, staff of the TSLAC and TEA. The estimated date of presentation to both the State Board of Education and the Commissioners of the Texas State Library and Archives is January 2003. For more information about School Library Standards, visit www.tea.state.tx.us/technology/libraries.

Library Supplement Funds for Library Purchases

Funding

Senate Bill 1, Rider 70, passed by the 76th Texas Legislature, indicated that up to $925,000 for each year of the biennium could be funded for "books and other school library materials that are catalogued and circulated from a central source in each school. In 2000, Rider 67 increased that amount to $1,200,000. The agency was directed to identify unexpended federal and state discretionary funds for this project. It is the intent of this legislation that public school libraries be in compliance with standards established in 1997 by the State Library and Archives Commission." During the 2001-02 biennium, funding was distributed on a first-application, first-funded basis. The district application included the October PEIMS enrollment figure. Districts had to have spent at least $1.00 per pupil before submitting the application. The amount of funding was twenty-five cents per pupil per district the first two years and increased to thirty cents per pupil per district in 2001. The supplemental funds for library purchases administered through TEA's Library Services rules state that funding from this source must be spent on library resources that are:

- Tied to high academic standards,
- Used to improve student achievement,
- Part of an overall education reform program,
- Cataloged and circulated from a central source

These resources include books, audiovisual resources, computer software cataloged and circulated from the library, informational database licenses accessible over a library network, a district or regional network, and/or the Internet. Over 3.2 million students benefited from this funding each year. For more information on the library supplement, go to www.tea.state.tx.us/technology/libraries.

Funding Level

Funds for this purpose shall be allocated out of available federal Consolidated Administrative funds and from funds from grants subject to the federal "Ed Flex" statute. TEA may also use General Revenue Funds over which the commissioner has discretion.

2000	not to exceed $ 925,000	$923,443.94
2001	not to exceed $ 925,000	$778,496.58
2002	not to exceed $1,200,000	$811,952.04
2003	not to exceed $1,200,000	No unexpended funds have been identified at this time

Technology Demonstration Programs

TEC 32.035

Description

Senate Bill 1, passed by the 74th Texas Legislature and codified as Texas Education Code, Section 32.035(a), calls for the agency to establish demonstration programs to: (1) investigate the uses, effectiveness, and feasibility of technologies for education, and (2) provide models for effective education using technology. A focus of these projects, as authorized in TEC Section 32.035(b), is "to encourage participation by and collaboration among districts, regional education service centers, the private sector, state and federal agencies, non–profit organizations, and institutions of higher education."

Purpose

The purpose of Technology Demonstration Programs is to provide equal access for students, teachers and administrators throughout the state to high quality teaching and management tools.

Projects for Educational Technology (PETs)

The PETs program during 1994-1998, offered planning and implementation grants which allowed districts or collaboratives to design plans for using technology to enhance staff development and student learning. Planning grants enabled recipients to engage in a technology planning process that often led to additional grants and other resources for implementation of their plan. Implementation grants focused on staff development, integration of technology into the curriculum and library/media services. These projects helped develop relevant curriculum materials that support the TEKS. Planning and implementation grants were awarded to 48 districts and collaboratives that impacted 133 districts, most ESC regions, as well as higher education institutions and private sector entities.

Technology Demonstration Projects

Study of the Texas Virtual School Pilot

In 2001, the Texas Legislature directed the Texas Commissioner of Education to gather needed information on the quickly expanding world of electronic courses and virtual learning. In order to gather data to support recommendations that enable high-quality online learning and potential state funding for these courses, the Legislature passed Senate Bill (SB) 975 in 2001. This legislation called for the commissioner to establish a program to examine the state policies, requirements, and restrictions that impact districts and charter schools offering electronic courses to local students who are not physically present for all or part of these courses.

To implement SB 975, the Texas Education Agency (TEA) established and administered the Virtual School Pilot (VSP) during the 2001-02 school year. Twenty-four charter schools and school districts participated in this first year pilot. The pilot is continuing during the 2002-03 school year with 23 participants. The same legislation also mandated the commissioner to prepare a report about the program. A study of the Texas Virtual School Pilot (VSP) was conducted between August 2001 and November 2002 to gather data and prepare a report for the lieutenant governor and the speaker of the house. Legislation requires the report to address the following issues:

(1) available methods of verifying student attendance;

(2) security or privacy issues involved in providing electronic courses;

(3) educational benefits of electronic courses;

(4) methods for funding electronic courses, including fiscal costs and benefits;

(5) a list of waiver requests submitted to the commissioner; and

(6) a list of provisions waived by the commissioner.

A separate report on the Virtual School Pilot provides an overview of the activities of the school districts and charter schools that participated in the first year of the pilot program. This information includes descriptions of methods used to offer electronic courses, information about the students who took these courses, and pilot program costs. Findings from the study and recommendations for the future are also detailed.

Investigating Quality of Online Courses

Texas, like many other states, has developed rigorous academic content standards defining student expectations and requirements. Until recently, however, no comparable statewide standards existed to address student achievement and academic excellence for Internet-based courses. As the demand for these types of courses rises, Texas educators must provide assurance online courses being offered are of the highest quality in all respects. Therefore, in parallel with the Virtual School Pilot, the Investigating Quality of Online Courses Pilot (IQ Pilot) was established.

The goal of this pilot was to develop and pilot quality of service guidelines for online courses to provide assurance to the state, school districts, and campuses that courses meeting these guidelines will be of the highest quality in all respects and that they address student achievement and academic excellence. Stakeholders from Texas and across the country were invited to participate in the process of developing quality of service guidelines for online courses. The resulting guidelines and an accompanying evaluation matrix are the result of the efforts of state and national experts whose task was to develop a tool that could be used to improve the quality of Internet-based courses for Texas' students. The guidelines developed during Phase I were posted on a public viewing site inviting comments (http://www.iqstandards.info). The general public was invited to review both the set of guidelines and the evaluation matrix. Thus far there have been very favorable comments and recommendations received.

Phase II of the pilot was designed to validate the guidelines developed and provide a database tool to house vendor, evaluator and evaluation data. Course providers were invited to submit courses for evaluation and course evaluators were recruited from across the state. At the same time, the database tool was developed for use during this phase. To date, 18 courses have been submitted for evaluation. A report generator provides comparison data of the reviewed courses to provide a tool for superintendents or other district personnel when making decisions regarding online courses. Only those courses that meet or exceed evaluation criteria will be reported on the IQ web site. Those that do not meet the criteria will not be included in the reports. Course providers will receive feedback from the evaluation process for all courses submitted. Results of course evaluations through the pilot became available in June 2002. Participation in the IQ Pilot Project is voluntary.

Plans are to continue the IQ Pilot through the 2002-2003 school year. The guidelines and evaluation matrix will be reviewed for any needed changes. Additional courses will be solicited and evaluators recruited and trained. In addition, the database will be refined to improve functionality and automate report generation. The evaluation reports page of the IQ web site will include an online searchable database to categorize and display reports and a course description will be included for each of the courses listed. In addition, statewide distribution of the guidelines and awareness of the database will enable schools, teachers and parents to access information about the quality of online courses. Additional deatils about the IQ Pilot are provided in a separate report on the Virtual School Pilot and the study of electronic courses and virtual learning.

Ed Tech PILOTS 1999-2001 (Providing Increased Learning Opportunities for Texas Students)

TEA conducted educational technology pilots at 13 sites that represented a cross section of Texas elementary, middle and high schools across the state. The primary objective of these pilots was to examine the effectiveness of using various technologies to deliver substantial curriculum content to students and to improve student learning. The pilots examined the cost and efficacy of using technology to deliver curriculum that has traditionally been delivered through print media. The pilots used on various technologies and involved hardware and curriculum products from numerous vendors.

Funds provided support for the school districts selected to participate in the pilots. Awards, selected through a peer review process, were announced in January of 2000. Results from the pilots shared data related to the impact on students, teachers, campuses, families, and communities as well as data on cost and benefits of using the technologies and content. A final report was provided to the Legislature in December, 2001.

Ed Tech PILOTS 2002-2003

Additional EdTech PILOTS were established based on the recommendations from the original pilot evaluation. Rather than pilot technologies directly with students, four pilots were established to provide technology-based resources for teachers. The general purpose of these pilot projects is to use technology to more effectively deliver existing content or new student performance data to classroom teachers, and thus contribute to more informed student instruction. All projects employ a web interface as a focal point for delivering this content. The primary goals of the education technology pilot projects center on both content and technology, and are meant to be achieved across the diversity of schools represented in the various pilot projects. These goals include:

- Increasing the use and usability of existing print and on-line resources
- Increasing instructional or student assessment effectiveness
- Increasing student achievement
- Increasing the efficiency of curriculum resource or assessment delivery

The Texas Primary Reading Inventory (TPRI) PILOT

The Texas Primary Reading Inventory (TPRI) PILOT project is exploring the use of a handheld personal digital assistant (e.g. PDA, such as a Palm Pilot) to collect student performance data as teachers assess individual students using the TPRI. A software-based version of the TPRI has been developed for the pilot that runs on a PDA. A teacher uses the PDA-based TPRI to enter data as each student completes the TPRI. Once assessment is complete, the software program then uploads individual student data to a secure database via the Internet. The database aggregates data for all students in a classroom and then makes it accessible back to the teacher on a secure web site. The secure web site offers various data analysis tools and recommended teaching intervention strategies that are tied to certain student performance benchmarks. The primary goals of the project are to develop the handheld and secure web site applications, deploy them to a variety of classroom types across multiple school districts, successfully use them for actual TPRI administrations, and to provide more useful student performance data immediately to teachers. The project involves a partnership between the Texas Education Agency, University of Texas Center for Academic and Reading Skills, Region IV Education Service Center and Wireless Generation. The project began on 8 campuses in 4 school districts involving 100 teachers. Additional campuses are to be added as the pilot progresses.

The Biology PILOT

The Biology PILOT project is exploring the use of a customized web interface as an access point for biology-oriented materials that are aligned to the state Texas Essential Knowledge and Skills (TEKS) learning standards and learning objectives on the state Texas Assessment of Knowledge and Skills (TAKS) test. The materials themselves are being drawn from the state's Texas Library Connection (TLC) online full-text databases, specifically associated with individual biology textbooks on the state's approved textbook list and packaged as lesson plans that cover TAKS learning objectives. The web interface allows a teacher to readily locate these materials within the TLC online databases based on content strand and the specific textbook being used in the classroom. The primary goal of the project is to extend the reach of current generation biology textbooks by delivering TEKS/TAKS-aligned curriculum content to teachers and students in a readily accessible lesson plan format via the Web. The project involves a partnership between Texas Education Agency, Region IV Education Service Center, the Gale Group, and Publishers' Resource Group. The pilot involves Biology teachers from districts in all 20 regions of the state.

The Social Studies PILOT

The Social Studies PILOT project is similar in intent and structure to the Biology PILOT project. The project is piloting the use of curriculum materials that are being drawn from the state's Texas Library Connection (TLC) online full-text databases and specifically associated with textbooks on the state's approved list in Grade 8 U.S. History, and high school World History and World Geography. The materials are meant to supplement those TAKS objectives covered in any one text. A web interface allows a teacher to readily locate these materials within the TLC online databases based on content strand and the specific textbook being used in the classroom. The primary goal of the project is to extend the reach of current generation social studies textbooks by delivering TEKS/TAKS-aligned curriculum content to teachers and students in a readily accessible lesson plan format via the Web. The project involves a partnership between Texas Education Agency, Region VI Education Service Center, the Gale Group and Publishers' Resource Group. The pilot involves Social Studies teachers from districts in all 20 regions of the state.

The Math Online Homework Help PILOT

The purpose of this project was to develop and evaluate an online mathematics homework service for grades 5-8. The UT Austin Homework service has been in development for over a decade, and services over 10,000 students throughout Texas every semester at high school and college levels. With TEA support, approximately 800 additional math problems were developed for grades 5-8 based on TAKS-like test items released by TEA. This pilot will explore services that assist teachers in providing and grading mathematics homework assignments with immediate assessment, and may also assist them in providing and grading student examinations. A study of the use of these problems will be conducted to address questions identified by the Texas Education Agency in cooperation with The University of Texas at Austin.

A more in-depth report on the current EdTech PILOTS may be found in a separate publication, *An Interim Report on the Ed Tech PILOTS.*

Funding Level

FY 1996	$1,570,000
FY 1997	$ 500,000
FY 1998	$ 150,000
FY 1999	$ 175,000
FY 2000	$1,000,000
FY 2001 – EdTech PILOTS Rider	$1,307,200
FY 2002	$ 400,000
FY 2002 – EdTech PILOTS Rider	$ 683,600
FY 2003	$ 200,000
FY 2003 – EdTech PILOTS Rider	$ 683,600

Technology Allotment

TEC 14.063/TEC 31.021

Description

Technology Allotment funds, established during the Sixth Called Session of the 71st Texas State Legislature, provide $30 per student for technology. These funds were originally intended to increase incrementally each year, up to $50 per student. Subsequently, the funds were held at $30 per student. In 1995, revisions to the Texas Education Code moved the Technology Allotment to TEC 31.021 to be paid from the Textbook Fund. Through the Technology Allotment, school districts across the state have a baseline resource with which to develop and expand their existing technology programs and to provide technology training.

Technology Allotment funds may be used only to:

(A) Provide for the purchase by school districts of electronic textbooks or technological equipment that contributes to student learning; and

(B) Pay for training educational personnel directly involved in student learning in the appropriate use of electronic textbooks and for providing for access to technological equipment for instructional use.

The national and state level recommendation is for schools to spend at least 25% of their technology funds for professional development.

Electronic Textbook is defined as: computer software, interactive videodisc, magnetic media, CD-ROM, courseware, on-line services, an electronic medium, or other means of conveying information to the student through electronic means. Technological equipment is defined as hardware, device or equipment necessary for instructional use to gain access to or enhance the use of an electronic textbook.

Purpose

The Technology Allotment was established to provide equal access for students, teachers and administrators to teaching and learning tools of high quality and information resources through the application of computers and emerging technology; and to improve student productivity throughout the state.

Funding Level

FY 1996	(Avg. $30 per student)	$103.1 M
FY 1997	(Avg. $30 per student)	$105.6 M
FY 1998	(Avg. $30 per student)	$107.6 M
FY 1999	(Avg. $30 per student)	$109.4 M
FY 2000	(Avg. $30 per student)	$112.1 M
FY 2001	(Avg. $30 per student)	$113.1 M
FY 2002	(Avg. $30 per student)	$115.6 M
FY 2003	Estimated	$120.0 M

Educator Preparation and Development

Executive Summary

Educators today are preparing students for occupations that have yet to be defined. No matter what those occupations will be, it is certain that technology will continue to play a major role both in students' lives today and in their future. Technology has become an integral part of our society and the amount and variety of technologies in our schools are increasing rapidly to keep pace. As electronic tools affect our everyday lives, technology's effective use in education is essential. Texas needs new teachers with new technology skills and current teachers capable of learning how to integrate technology effectively. A well-trained teacher work force must be actively engaged in the current practices of teaching and learning to affect student achievement. In order to survive in the 21st century, students and teachers, administrators, new teachers and faculty must become skilled in the use of educational technology for problem solving, critical thinking and learning new content.

Preparing beginning teachers, experienced teachers and administrators to guide 21st century learning in our technological society involves a reexamination and retooling of the professional core of our education system. This effort cannot be limited to a single body or single method; it is a goal that must be shared by many education stakeholders and supported by ongoing access to flexible professional preparation and development. It must be aimed not only at new educators—teachers, administrators, curriculum coordinators, counselors, and librarians, among others—but at experienced educators as well, who must be willing to learn.

At the preservice level, the State Board for Educator Certification (SBEC) has approved educator certification standards in Technology Applications for all beginning educators. The standards have been developed for inclusion in SBEC-approved educator preparation programs. They are based on the Technology Applications TEKS for Grades 6-8. These standards are a part of the Texas Examinations of Educator Standards (TExES) frameworks in Pedagogy and Professional Responsibilities. The new TExES are scheduled for implementation in fall 2002. These examinations, aligned with the TEKS, will weave technology directly into expectations of what new teachers should know and be able to do.

For current educators, a wide variety of professional development opportunities are provided at the district, regional and state level. Professional development is recognized by many organizations as vital to the effectiveness of technology in our education system. The recently adopted *No Child Left Behind Act of 2001* demonstrates a commitment to professional development through a myriad of programs. They offer funds for professional development to ensure teachers understand how to integrate appropriate technology tools effectively with their curriculum. Additional resources are made available for teacher preparation initiatives. In addition, Title II, Part D "Enhancing Education Through Technology" requires each local school district receiving funds to use at least 25% of its allocation for high-quality professional development activities to prepare teachers to integrate technology into instruction. Other grant programs, such as the Telecommunications Infrastructure Fund (TIF) grants require at least 20% of grant funds be devoted to technology professional development. Districts are also encouraged to use a portion of the Technology Allotment to train teachers to use electronic instructional materials.

Practicing educators benefit from these efforts and from contributions of organizations such as the Southwest Educational Development Laboratory, the Texas Center for Educational Technology and the South Central Regional Technology in Education Consortium, whose programs strive to integrate technology into the instructional process.

In our libraries, we find better-prepared librarians and media specialists, thanks to new certification standards and to collaboration by the Texas State Library and Archives Commission and the Texas Education Agency for delivering relevant professional development to campus librarians. We see the results of this professional development throughout the state, as librarians and teachers work together to integrate research skills into the curriculum.

We find many possibilities for the "just in time" model of professional development, which gives educators information, training and technical support when and where they need it, both during and outside their professional day. Teachers and other school staff members can choose from distance learning opportunities offered via satellite, video-conferencing or the Internet.

Educator Standards for All Beginning Educators

www.sbec.state.tx.us

All Beginning Educators

The State Board for Educator Certification (SBEC) has approved educator certification standards in Technology Applications for all beginning educators. The standards have been developed for inclusion in SBEC-approved educator preparation programs. They are based on the Technology Applications TEKS for grades 6-8. These standards are a part of the Texas Examinations of Educator Standards (TExES) frameworks in Pedagogy and Professional Responsibilities. The new TExES are scheduled for implementation in fall 2002.

Technology Applications Standards I–V:

- All teachers use technology-related terms, concepts, data input strategies, and ethical practices to make informed decisions about current technologies and their applications.
- All teachers identify task requirements, apply search strategies, and use current technology to efficiently acquire, analyze, and evaluate a variety of electronic information.
- All teachers use task-appropriate tools to synthesize knowledge, create and modify solutions, and evaluate results in a way that supports the work of individuals and groups in problem-solving situations.
- All teachers communicate information in different formats and for diverse audiences.
- All teachers know how to plan, organize, deliver, and evaluate instruction for all students that incorporates the effective use of current technology for teaching and integrating the Technology Applications Texas Essential Knowledge and Skills (TEKS) into the curriculum.

TEA Recommendations for All Current Educators

Current educators should strive to meet the SBEC standards in Technology Applications for all beginning educators.

Educator Standards and Certification

www.sbec.state.tx.us

Along with student Technology Applications standards, there are **educator** Technology Applications standards and certificates. The State Board for Educator Certification (SBEC) has approved educator certification standards in Technology Applications for all beginning educators. SBEC Technology Applications Standards I-V have been developed for inclusion in SBEC-approved educator preparation programs. They are based on the Technology Applications TEKS for students at grades 6-8. Current educators should strive to meet the SBEC standards in Technology Applications for all beginning educators. The Technology Applications SBEC Standards can be used to assist the state in ensuring that **all** educators are "technology literate"—the charge given to the State through *Enhancing Education Through Technology Act of 2001*. Technology Applications standards and certificate options include: Technology Applications All Level, Technology Applications 8-12, Computer Science 8-12, and Master Technology Teacher All Level. These give Texas teachers many options for expanding their knowledge and skills. For teacher technology standards and certificate information, visit www.sbec.state.tx.us.

Current Classroom Assignment Criteria

Current SBEC rules provide school districts with considerable flexibility in assigning personnel to teach Technology Applications courses at all grade levels. A district may determine that a teacher with any elementary certificate is competent to teach Technology Applications at grades PreK-5, and a teacher with any elementary or secondary certificate is competent to teach Technology Applications courses at grades 6-8. Similarly, a district may determine that any certified secondary teacher is competent to teach six of the Technology Applications courses offered at grades 9-12 (Web Mastering, Desktop Publishing, Multimedia, Digital Graphics/Animation, Video Technology, Independent Study in Technology Applications). In order to teach Computer Science I and II, a teacher must hold a Computer Information System (CIS) certificate or the new Computer Science certificate. ***NOTE: Until fall 2002, SBEC will continue to issue the CIS certificate and the IPT endorsements.***

The SBEC has been developing new educator standards and examinations that are aligned with the TEKS. Until the new exams are available educator preparation programs will be responsible for ensuring candidates demonstrate the requisite knowledge and skills as defined by the educator standards. Individuals seeking ***initial*** certification must also take the current Professional Development ExCET until September 2002, at which time they will take the new Pedagogy and Professional Responsibilities test. The new certificates in Technology Applications follow:

Certificate	SBEC Standards	Tentative Dates for Available Examination
Technology Applications All Level (EC-12)	TA Standards I-V and VII-XI	Fall 2004
Technology Applications 8-12	TA Standards VII-XI	Fall 2004
Computer Science 8-12	TA Standard VI	Fall 2004
Master Technology Teacher EC-12	MTT Standards	Summer 2003

Assignment of Public School Personnel

19 TAC Chapter 230, Subchapter U, contains the requirements for assignment of teachers, administrators, and other professional and paraprofessional personnel serving in the Texas public schools. In May 2002, the SBEC adopted 19 TAC Chapter 233, Categories of Classroom Teaching Certificates, which contains the new classroom teaching certificates scheduled for implementation in fall 2002 and indicates the broad curriculum areas or courses that the holder of each certificate is prepared to teach. In January 2002, the SBEC approved draft language that would allow the grandfathering of teachers currently assigned to certain Technology Applications courses, provided they annually complete continuing education and professional development training related to the specific course(s) taught. As approved by the SBEC, rules would require that all teachers initially assigned to teach any Technology Applications courses beginning with the 2003-2004 school year hold Technology Applications certification.

Master Technology Teacher: Certification and Grant Program

www.capitol.state.tx.us

The 77th Texas legislature passed House Bill 1475 that mandates a Master Technology Teacher certification and grant program. This program is very similar to the Master Reading Teacher and Master Mathematics Teacher. Both the Texas Education Agency and State Board for Educator Certification will be involved in the implementation of this legislation.

To ensure that there are teachers with special training to work with other teachers and with students in order to increase the use of technology in each classroom, the SBEC board shall establish a master technology teacher certificate. Plans are for the first administration of the new examination for the master technology teacher certification to take place in 2003.

Under this new legislation the commissioner shall make grants to school districts to pay stipends to selected certified master technology teachers. The commissioner shall give preference to teachers who teach at high-need campuses. Criteria for selecting high-need campuses will be identified and approved as part of the commissioner rules. The grant program is to be implemented after the development of the examination for the master technology teacher certification. There is currently no funding for the grants so an appropriation will be essential once the Master Technology Teacher Certificate and examination have been implemented by SBEC.

SBEC established a committee of Texas educators, educator preparation faculty, business representatives, and other stakeholders to develop standards for the new certificate. These standards will serve as the basis for the new certificate examination to be implemented in 2003. MasterTechnologyTeacher Standards were adopted by the SBEC board in January 2002. They can be found at http://www.sbec.state.tx.us/mtp/mtp.htm. These standards will serve as the basis for the new certificate examination. In February of 2002 another committee finalized the test frameworks for the new MasterTechnology Teacher (MTT) exam. Plans are for the first administration of the new examination for the Master Technology Teacher certification to take place in Summer 2003.

Overview of Master Technology Teacher Development Timeline

Draft standards posted on SBEC web site for public review	December 2001
Standards approved by SBEC	January 2002
Test framework development and reviewed	February 2002
Draft framework available on SBEC web site	March 2002
First program approved by SBEC-Our Lady of the Lake University	August 2002
Content validation survey completed; Test framework finalized	Fall 2002
Preparation manual (tentative) release	April 2003
First administration of MTT examination (tentative)	Summer 2003

Technology Preview Centers and Training Programs

TEC 32.036

Description

Twenty regional education service centers (ESCs) were established in Texas to provide school districts with services that enhance efficiency, effectiveness and the performance of students, teachers, administrators and school personnel.

School districts across the state can turn to the education service center (ESC) in their area for technology services that enhance efficiency, effectiveness and the performance of students, teachers and administrators. Each of the state's 20 ESCs must provide planning, consultation, professional development and technical assistance in response to district needs and in support of the State Board of Education's *Long-Range Plan for Technology*. Development of collaboratives and partnerships, regional network development and operation, education resources preview centers, training and professional development services, support of the Texas Library Connection and other statewide technology initiatives, planning and grant development, and distance learning opportunities are among the desired outcomes of the technology services provided to schools by the ESCs. The Texas Education Agency's Educational Technology Division assists the ESCs with financial support.

No two ESC are alike. They reflect the incredible diversity of Texas schools, communities and learners and the enormous differences in geographic and demographic conditions across the state. All 20 ESCs have an identical mission. The strategies to best fulfill that mission vary with each ESC. Local needs, interests and capabilities determine the regional technology programs designed by the ESC. The range of creative and effective ways ESCs interact with their districts and build on local initiatives to accomplish their mutual goals is highlighted on their web sites.

Purpose

Technology professional development is one of the most important services provided by ESCs. Each ESC designs an array of professional development offerings to meet the varied needs of the educators in its service area. In addition to the many technology workshops offered by each ESC throughout the year, customized training can be provided to meet the specific learning needs of individual school districts. Educators can learn the basics of technology use, explore strategies for integrating technology across the curriculum, find educational resources on the Internet, receive training on specific software packages, and attend TIFTech training provided by their ESC. Hands-on, face to face training is available as well as training via multiple technologies. Educators can view the professional development opportunities available from their ESC through the ESC's Web-based catalogs and can register online for selected workshops.

ESCs provided training in technology for 111,663 educators during FY 2002.

Districts receive critical assistance from ESCs as they embrace new models of teaching and learning based on a 21st century vision of what learners can accomplish using educational technology. ESCs offer tools and training that allow students to increasingly take charge of their own learning and enable educators to help them do so in meaningful ways. For example, ESCs assist schools in supporting and maintaining their computer equipment. High school students learn troubleshooting techniques for PCs, as well as how to build computers and small local area networks (LANs) in workshops offered by a number of ESCs. Through this program, students can take training that leads to industry standard certification.

Secure and affordable local regional networks have been developed by all 20 ESCs for educators to use for everything from the development and sharing of lesson plans to e-mail, and from Internet access to job searches— and ESCs have taught them how best to utilize these networks. ESCs are developing a growing base of educators who can support technology at the campus level through their training efforts directed at key district and ESC personnel. ESCs also maintain technology centers for preview and checkout of software and other media, as well as assistive equipment for students with disabilities. In addition, they create and update important administrative and management software and data tools that aid business practices and help educators monitor and adjust instruction to meet student performance accountability standards.

Distance learning capabilities are provided by ESCs through a growing variety of mediums: Internet, videoconferencing, satellite or a blending of several delivery mechanisms. These distance learning opportunities are especially helpful to small,

poor or isolated districts—providing students with access to specialized offerings previously unavailable in their schools. These offerings include courses needed to complete the Recommended High School Graduation Plan, dual and concurrent credit courses, Advanced Placement and International Baccalaureate courses, enrichment and career programs, electronic field trips and bilingual instruction. Through distance learning, districts lacking instructors in hard-to-find science, math, foreign language, or technology courses may pool their resources and hire teachers jointly for videoconference classes received at multiple sites. Distance learning also provides educators with access to high-quality, on-demand professional development and continuing education opportunities. School personnel can participate in meetings, study groups and forums without leaving their campuses. School board members benefit from training delivered electronically, as do parents and community members who may meet with educators via technology.

ESCs are critical to providing ongoing training and support for statewide technology initiatives, including T-STAR and TLC and they serve as important resources for districts seeking funding via TIF or TARGET grants and E-Rate. ESCs frequently establish and maintain partnerships with software and hardware vendors, colleges and universities, and other ESCs that support statewide technology initiatives and benefit Texas schools. The 20 ESCs play a key role in assisting districts and the state in reaching the goals of the *Long-Range Plan for Technology, 1996-2010.*

> ESCs facilitated training in planning and grant development to integrate technology into campus and district improvement plans and other planning documents to 929 districts.

Source: ESC annual Accountability Report

Funding was increased in FY 97 due to the high demand for technology planning and staff development through ESCs.

Funding Level

FY 1996	$6,000,000
FY 1997	$8,000,000
FY 1998	$8,000,000
FY 1999	$8,000,000
FY 2000	$8,000,000
FY 2001	$8,000,000
FY 2002	$8,000,000
FY 2003	$8,000,000

This funding contributes to support for products and services provided by the ESCs. For more detailed information on these products and services see ESC section in this document.

Administration and Support Services

Executive Summary

The technology field is changing rapidly. It is virtually impossible for any one person within a school system to maintain the necessary knowledge regarding all aspects of schooling and school operations when planning for and implementing technology. Because of this, school personnel must plan collaboratively and continuously if the use of technology is to lead to improved student learning, increased productivity and more efficient operations. Effective integration requires district leaders who articulate and advocate a vision of what technology can do for teachers and learners and of school operations that facilitate the achievement of that vision.

It is not enough merely to install technology infrastructure—to connect schools to the Internet or to teach students to use software for gathering information. The successful integration of technology into Texas schools, as outlined in the *Long-Range Plan for Technology, 1996-2010*, hinges on administrators knowing what their schools need and doing what must be done to fulfill those needs. Administrators facilitate the systems that allow our teachers and students to learn and use technology. As a result, successful integration of technology depends on the effective support of those administrators' efforts.

In line with the Long-Range Plan, several systems have been put into place for that purpose. Consider these examples of applications now available on the Texas Education Agency web site:

- Information from the AEIS is searchable online, giving administrators fingertip access to data such as student performance, staff demo-graphics, and school and district accountability ratings and finances.
- AskTED allows users to find school directory information and predefined reports.
- Online payment utilities such as the Child Nutrition Programs Information Management System and the Foundation School Program Payment System saves school personnel precious time and resources.

Technical support is also a key component for the successful use of technology. In addition to providing resources to Texas schools, we must ensure that assistance is available for learning to use these tools and for troubleshooting problems in the early stages.

Planning for technology is also critical, as is finding the funding for it. The *Long-Range Plan for Technology, 1996-2010* directs much of the growth in the use of educational technology throughout the state. Eligibility for funding sources such as E-Rate, the Technology Applications Readiness Grants for Empowering Texas (TARGET) grant program, and the Telecommunications Infrastructure Fund (TIF) require that districts have their own technology plans in place. In addition to those funding sources, districts are using the state's $30-per-student Technology Allotment, a source they count on to pay for professional development and hardware and software needs. The *Texas STaR Chart* is designed to help campuses and districts with planning and to determine their progress toward meeting the goals of the *Long Range Plan for Technology, 1996-2010*, as well as meeting the goals of their district. The *Texas STaR Chart*, patterned after the *CEO Forum's STaR Chart*, has been developed around the four key areas of the *Long-Range Plan for Technolog, 1996-2010*: Teaching and Learning, Educator Preparation and Development, Administration and Support Services, and Infrastructure for Technology. The *Texas STaR Chart* will also assist in the measurement of the impact of state and local efforts to improve student learning through the use of technology. Additional information on the Texas STaR Chart is available at: http://www.tea.state.tx.us/technology/etac/campus_txstar/

The goal for technology in classrooms across Texas is to prepare our students for a future of technology fluency and to enhance students' acquisition of knowledge through technology. Technology's integration into our schools doesn't end there. District and campus administrators are also finding many uses for technology that help them in their important roles as managers and as education leaders.

Educational Technology Advisory Committee

Authority

The Educational Technology Advisory Committee (ETAC) is authorized by the Texas Education Code, 7.055.11. The function of the Educational Technology Advisory Committee is to work in an advisory capacity to increase the equity, efficiency, and effectiveness of student learning, instructional management, staff development, and administration. The efforts of this committee will be in the development, implementation and evaluation of technology guidelines to provide districts with the tools for self-assessment to aid in the effective integration of technology across the curriculum. The committee will bring collective information from across the state and nation to assist in the identification of the needs and future directions of educational technology, related to appropriate use of technology, technology proficiencies for teachers, staff development needs for pre-service and in-service teachers and digital content needs.

Charge

The Educational Technology Advisory Committee has been instrumental in developing, piloting and implementing both the Campus and District Level *Texas STaR Chart*. ETAC should continue to promote the *Texas STaR Chart* including advocating for strategies that will result in all districts participating in the use of the *Texas STaR Chart*.

The next activity for ETAC to pursue is the investigation, modification, and recommendations for an on-line submission format for districts to use to submit their District Technology Plan to the TEA for approval. These plans should contain both quantifiable and qualitative data in order to be used for many applications that require a technology plan to be approved and on file. The *No Child Left Behind Act of 2001* requires that all districts have a technology plan, as does the *2002 Update to the Long-Range Plan for Technology, 1996-2010*. The Telecommunications Infrastructure Fund Board requires a plan as does the E-Rate application.

A large number of districts must submit plans for E-Rate in April of 2003 so the timing is right for an electronic submission of these plans. The collaboration of ETAC and the staff of the Educational Technology Division of the TEA will be important as this format is developed.

Texas School Technology and Readiness Chart (STaR Chart)

The *Texas STaR Chart* was developed around the four key areas of the *Long-Range Plan for Technology, 1996-2010*: Teaching and Learning, Educator Preparation and Development, Administration and Support Services, and Infrastructure for Technology. The *Texas STaR Chart* design helps campuses and districts determine their progress toward meeting the goals of the *Long Range Plan for Technology*, as well as meeting the goals of their district. The *Texas STaR Chart* assists in the measurement of the impact of state and local efforts to improve student learning through the use of technology. The *Texas STaR Chart* contains 22 focus areas with 4 levels of progress originally assessing district level technology in the Field Test year of 2001 and Benchmark year of 2001-2002. During the Benchmark year, 796 districts entered data into the online chart. In accordance with "No Child Left Behind," campus level data now is collected for 2002-2003. Multiple reporting mechanisms will allow aggregation of data to be used in planning by districts and campuses.

In the future STaR Chart data will be used with other types of databases including Infrastructure and GIS, to not only pinpoint strengths and weaknesses in schools and technology plans, but specifics of why something works in one area and not in another. This will enable development of programs and systems tailored to greater facilitate and refine the specifics of incorporation of technology into education. A copy of the *Texas STaR Chart* is included in this document and the chart may be accessed online at: www.tea.state.tx.us/technology.

Universal Service Fund for Schools and Libraries (E-Rate)

The federal Universal Service Fund for Schools and Libraries, more commonly referred to as E-Rate, provides discounts to schools and libraries on telecommunications services. Discounts range from 20 to 90% based on the number of students eligible for the federal school lunch program. Texas schools are realizing significant benefits through E-Rate discounts.

A school must have an approved technology plan in order to be eligible to participate in the E-Rate program. The Texas Education Agency is the official approving agency for public schools in Texas. In Year 1,812 school district plans were approved for one, two, or three years during a peer review process. If plans were disapproved, agency and education service center staff worked with districts to correct deficiencies until the plans met the required criteria and could be certified. In Year 2, 281 school district plans were approved for one, two, or three years, and in Year 3, 389 plans were approved. In 2001, 469 plans were approved and in 2002, 745 technology plans were approved.

Educational Technology Coordinating Council (ETCC)

The 76th Legislature's House Bill 1 established the Education Technology Coordinating Council (ETCC or the Council). The Council consists of representatives from the Texas Education Agency (TEA); the Department of Information Resources (DIR); the General Services Commission, now known as the Texas Building and Procurement Commission; the State Board for Educator Certification (SBEC); the Telecommunications Infrastructure Fund (TIF) Board; the Texas State Library and Archives Commission (TSLAC); the Texas Higher Education Coordinating Board (THECB); and the Colleges of Education (SCDE).

The Council is charged with ensuring "the cooperation and coordination of the state's efforts to implement educational technology initiatives," and to develop "a statewide master plan for education technology." The Legislature instructed the Council to pay "particular attention to the coordination of pre-service and inservice training for teachers and librarians."

GOALS

Eight goals were developed by the Council members.

Goal 1: Articulate the vision for and maintain a unified policy direction among Council members to guide the creation and implementation of educational technology initiatives in Texas.

Goal 2: Ensure quality pre-service and professional development to enable educators to effectively and efficiently use technology to improve student learning and administrative processes.

Goal 3: Develop the leadership in planning and implementation needed to ensure effective and efficient use of the technologies made available to educators.

Goal 4: Coordinate technology-related funding processes among state agencies to provide maximum benefits to schools and teacher preparation institutions, and issue grants to maximize a coordinated effort.

Goal 5: Help educational institutions understand the resources that are available and the most beneficial ways to use them.

Goal 6: Identify and develop profiles and select and disseminate exemplary practices of technology infrastructures within the state.

Goal 7: Promote a minimum level of technology access and use in the state's local education agencies and teacher preparation institutions.

Goal 8: Promote interoperability of technology resources and processes to derive maximum benefits for state and local investments in technology resources.

The success of the goals established by the ETCC is highly dependent on the collaboration of member agencies.

The table below highlights the involvement of each member agency by goal.

ETCC Goals	TEA	DIR	GSC	SBEC	TIF	TSLAC	THECB	SCDE
Goal 1 (Vision)	√	√	√	√	√	√	√	√
Goal 2 (Professional Dev.)	√			√	√	√	√	√
Goal 3 (Leadership)	√			√		√		√
Goal 4 (Coordination)	√	√	√		√	√		√
Goal 5 (Resources)	√				√	√		√
Goal 6 (Profiles)	√	√	√	√	√	√	√	√
Goal 7 (Access)	√	√	√	√	√	√	√	√
Goal 8 (Interoperability)	√	√	√		√	√		

*The lead agency or agencies are shaded.

Recommendations

The ETCC's goals provide the basis for comprehensive planning of educational technology initiatives, and set the direction and tone for coordination and collaboration among state agencies and institutions of higher education in Texas. These recommendations form a statewide plan for collaboratively implementing educational technology. In brief, the Council's original recommendations are as follows:

1. Continue the Education Technology Coordinating Council or successor group, and include the associated Legislative Rider in the bill pattern of each participating agency.
2. Continue coordination among the Telecommunications Infrastructure Fund Board, Texas Education Agency and Texas State Library grant processes.
3. Identify E-Rate funding recipients and assist non-participants in securing funding.
4. Develop a process for the SCDE to infuse technology within teacher education.
5. Develop a process for Colleges of Library Sciences to infuse technology within librarian education.
6. Identify models and strategies to provide opportunities for in-service educators to meet the technology proficiency benchmarks as established by SBEC.
7. Establish minimum standards for technology sustainability at schools and libraries.
8. Determine public education's role in creating a workforce for the digital economy.
9. Establish Web-based information resources via a Web portal that enables educators to make effective technology decisions.
10. Encourage local leadership, resource development, and community involvement for the use of technology in education.
11. Develop strategies for implementing and sustaining the goals of the ETCC.
12. Adopt the *Texas School Technology and Readiness (STaR) Chart* as the standard for K-12, and the CEO Forum's *Teacher Preparation STaR Chart* as the standard for SCDE.

For information regarding the implementation status of these recommendations, please refer to the ETCC's most current *Progress Report on the State of Texas Master Plan for Educational Technology 2000-2003* provided to the Texas legislature.

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Technology Literacy Challenge Fund

The U.S. Department of Education Technology Literacy Challenge Fund (TLCF) was a five-year, $2 billion effort to promote the four goals of the National Educational Technology Plan:

- All teachers will have the training and support they need to help all students learn through computers and through the information superhighway
- All teachers and students will have modern computers in their classrooms
- Every classroom will be connected to the information superhighway
- Effective and engaging software and on-line resources will be an integral part of every school curriculum

The TLCF program was implemented in Texas as the Technology Integration in Education (TIE) grant program. The purpose of TIE was to improve student achievement by fully integrating technology into teaching and learning and to ensure that all Texas students are technologically literate by the year 2010. This was accomplished by using TIE funds to accelerate the implementation of the *Long-Range Plan for Technology, 1996-2010.* The funds were used for projects that will actively promote: integration of technology into teaching and learning; online curriculum development and delivery; distance learning; technology-based professional development; enhanced administrative operations; and other activities that use technology to improve education and increase student performance.

The TIE initiative grants address the recommendations in the State Board of Education's *Long-Range Plan for Technology, 1996-2010* in three areas: teaching and learning, educator preparation and development and administrative and support services. These grants were coordinated with the Telecommunications Infrastructure Fund (TIF) to leverage state and federal resources. There is an increased focus on hands-on technology used in professional development to provide teachers with the opportunity to use technology effectively in all aspects of the curriculum. Many of the collaborative applications included school districts that are using a variety of technologies to share resources and information to increase cost efficiency in operations as well as developing partnerships with business and community members, colleges and universities, and other entities.

Projects also include online delivery of instruction to students, teachers, and administrators through a variety of technologies to expand learning opportunities regardless of district size or geographic location. Understanding how to employ technology to locate and evaluate information, to learn, make decisions, solve problems, and to collaborate and work in teams are essential skills for students and teachers in this rapidly changing digital society. The implementation of technology through the TIE grant program will enhance the technology capacity of all schools in Texas and foster communication and collaboration through information and resource sharing among various entities throughout the state.

Technology Integration in Education Evaluation

In 2001, TEA engaged the Texas Center for Educational Research to evaluate Texas' TLCF grant program entitled the Technology Integration in Education (TIE) Initiative to measure progress toward meeting the national goals and the implementation stages of the four areas of Texas' long-range plan for technology. Evaluators used statewide surveys and case studies to assess how instructionally-sound, technology-based materials and methods promote successful *teaching and learning*; how *educator preparation and development* efforts and initiatives prepare preservice and inservice teachers and other professional education community members to use technology more proficiently; how *administration and support services* enable administrators, educators, and other school staff to support technology integration efficiently and effectively; and how *infrastructure for technology*, including appropriate equipment, connectivity, and people, promotes progress toward curricular integration. Moreover, the evaluation measured the impact of *implemented* technology infusion on improving student learning and achievement. The report details findings from three statewide technology surveys that targeted Texas principals, teachers, and students. Responses were received from 1,648 principals, 33,076 teachers, and 86,787 students in grades 6 to 12. In total, more than 120,000 individuals participated in the TIE surveys.

The results are detailed in a full report provided to the Texas Education Agency and will be available on the agency website in January 2003. A few highlights from the findings are provided below.

Teaching and Learning—Teacher Technology Use

- Principals most frequently report that all teachers use technology for administrative record keeping (60%) and communicating with colleagues (42%). Fewer teachers communicate with parents via email, create electronic lesson plans, or deliver information via multimedia or PowerPoint presentations (3% to 12%).
- Teachers most commonly report technology uses such as creating instructional materials (95%), communicating with colleagues (93%), and using the Internet to gather information for lesson planning (93%). Communication with parents, creation of electronic lesson plans, and delivery of PowerPoint presentations are less prevalent.
- Teacher technology use differs by school size and student characteristics. Teachers in larger districts and campuses use technology for more activities and for more sophisticated purposes (electronic lesson plans, multimedia and PowerPoint presentations, and posting homework on a website). Teachers in schools with 25% or less economically disadvantaged students more often report technology use activities than their counterparts in schools with more low-income students.
- Teacher technology use varies by core-content area. Math teachers use technology less compared to other content areas. On the whole, English, science, and social studies teachers cite technology activities at similar rates, although science teachers more commonly use multimedia or PowerPoint presentations.

Teaching and Learning—Teacher Technology Proficiency

- Texas teachers have made strong gains in *technology proficiency* over the past five years. While 43% of teachers cited little to no technology experience five years ago (level 1), only 2% identified their current proficiency at that level. In contrast, the percentage of teachers reporting they skillfully use technology to accomplish instructional and productivity goals (level 4, the highest level) increased from 11% five years ago to 41% currently, and 85% of teachers rate their proficiency at the two highest levels.
- Two-thirds of teachers (68%) reported little or no *classroom integration* use five years ago (level 1), and only 9% noted they used technology as an integral part of the curriculum (level 4, the highest level). Although teachers have made strides in curricular integration, most recognize they are not currently at the highest level—11% currently use classroom technology very little or not at all (level 1), 33% are using technology on a basic level (level 2), and 24% are beginning to design technology projects (level 3). Comparatively, only 32% report currently using technology as an integral part of the curriculum and daily activities to create a new learning environment (level 4).
- The majority of Texas teachers (50%) and principals (58%) note teachers are *somewhat prepared* to use technology for instruction. Less principals than teachers, however, identify teachers as *very well prepared* to implement classroom technology activities (5% compared to 14%). In comparing Texas teachers to those nationally, survey respondents identify themselves as *well prepared* or *very well prepared* to use technology for instruction substantially more often than teachers nationally (44% versus 33%).
- The majority of students classify their teachers' computer abilities as *average* (45%) or *good* (39%). In comparing their teachers' abilities with their own, 16% of students rate their teachers' abilities as *poor*, while only 8% provide this rating for their own abilities. Similarly, 51% of students rate their personal computer abilities as *good*, yet only 39% provide this rating for their teachers' abilities.

Teaching and Learning—Student Technology Use

- Principals report high levels of student technology use, with all students in core-content classes practicing basic skills (100%). More than 90% of principals report student use of the Internet for research (98%), basic applications (96%), multimedia reports or projects (93%), and Texas Assessment of Academic Skills (TAAS) review software (91%). The frequency of student use varies substantially across categories; however, the majority report that students *often* practice skills and conduct Internet research.
- Compared to principal report on *schoolwide* use, substantially less teachers cite student use of technology in the *classroom* for Internet research (75%), to learn and practice skills (72%), and for basic technology applications (62%). The percentage of teachers reporting student use of graphing calculators (23%), virtual field trips (21%), or correspondence using technology (21%) is between 46 and 55 percentage points less than principal reports. In general, student technology use occurs infrequently in classrooms (*once a month or once or twice a semester*), except for practicing basic skills (*once a week or every day*).

- Consistent with educators' responses, students most frequently cite Internet research (68%), word processing (57%), and activities to learn and practice skill (52%). Fewer students describe using technology for TAAS review (29%) or peripherals (24%). Student responses, in general, also show that technology is used infrequently (*once a month or once or twice a semester*).
- Student technology use most frequently occurs in computer labs for middle schools (51%) and technology classes in high schools (67%). Less than 10% of students report technology use most often in their classrooms. Regardless of students' instructional level, technology use occurs most commonly in English classes, followed by social studies, science, and finally math. A more even distribution of middle school students' responses, however, indicates more consistent use across the content areas.
- While the vast majority of students rate their personal computer abilities as *average* (41%) or *good* (51%), differences emerge by student characteristics. Male students are more likely to rate their proficiencies as good compared to females (56% versus 47%), and White students more frequently rate themselves as good in comparison to African American and Hispanic students (57%, 50%, and 43%, respectively).

Teaching and Learning—Distance Learning Opportunities

- Nearly half of Texas principals (43%) report that distance learning (DL) or videoconferencing (VC) is available to campus educators, staff, and students. Schools most commonly use DL/VC technology to provide professional development sessions for teachers and other staff (74%) and facilitate administrative meetings (44%). Campuses less frequently use DL/VC for virtual fieldtrips (34%), student courses when teachers are unavailable (33%), advanced or specialized courses (28%), or dual-credit courses (27%).
- Advanced telecommunications use varies by instructional level. High school principals most frequently report DL/VC use for administrative meetings, school board member training, or student coursework (no available teacher, advanced or specialized, dual-credit or concurrent enrollment). Elementary principals are less likely than either middle or high school principals to cite telecommunications use—however, virtual fieldtrips and professional development sessions targeting educators and other staff more often occurs in elementary and middle schools.
- Telecommunications use differences also emerge by school and district size. Principals in small campuses report the more frequent delivery of administrative meetings, virtual fieldtrips, school board member training, and dual-credit or concurrent enrollment courses using DL/VC technology than principals in larger schools. Similarly, for most activities, as district size declines, the likelihood of principals reporting DL/VC use increases. Clearly, advanced telecommunications allow small, and often rural, districts and campuses access to educational resources.

Teaching and Learning—Impact of Technology on Students

- Although the vast majority of principals cite the impact of technology on students in almost all surveyed areas (85% to 100%), principals most frequently note *great* impacts of technology on motivation to learn (40%), enhancement of global perspectives (39%), technical skills needed for the future and class work (37%), and support for students with special needs (35%). Principals generally viewed technology as having only *small to moderate* impact on TAAS performance (78%).
- Responding to comparable survey items, more than 70% of teachers report that technology use impacts students at least to a *small extent* for every category. Teachers most commonly cite increased student motivation and engagement in learning (90%). Comparable to principals, teachers typically note only a *small to moderate* impact of technology on TAAS performance (62%).
- Students cite strong impacts of technology use on the quality of learning experiences and academic performance. Students most commonly *agree or strongly agree* that technology use improves the skills they need to go to college or get a job (91%) and makes learning more interesting (87%). Additionally, technology enables them to get better grades (85%), learn about the world (84%), and understand topics studied in class (82%).

Teaching and Learning—Barriers to Using Technology

- Principals most frequently identified technology integration barriers that involve issues of time—teachers lack time to learn and practice ways to use technology (94%), to develop technology-integrated lessons (93%), and to use instructional technology due to curricular requirements (86%) and testing pressure (84%). A substantial percentage of principals cite inadequate access to computers in the classroom as a barrier (80%). Although considered as barriers by the majority, principals less often cite issues related to outdated computers, inadequate access to computer labs, or unreliable Internet connections.
- Consistent with principal results, teachers frequently cite barriers related to time and technology access. Teachers lack time to plan and practice (86%) and to create technology-integrated lessons (85%). Time is also limited due to curricular requirements (79%) and testing pressure (70%). Teachers also cite insufficient availability of classroom computers (81%), with limited access most often identified as a *great barrier* to using instructional technology. Teachers less frequently mention barriers related to technical or administrative support.
- Students' primary technical problems include broken or slow computers (86% reporting this is at least *sometimes a problem*), slow or unreliable Internet connections (80%), and websites blocked by an Internet filter (73%). Students less often cite computers lacking needed applications (63%), challenges associated with sharing computers (60%), and teachers' inability to fix technical problems (59%).

Educator Preparation and Development

- The majority of Texas teachers (58%) participated in formal professional development on the use of computers, the Internet, and other technology slightly more than one day per year over the last five school years. About one-third of core-content teachers and two-thirds of technology teachers attended at least 11 training days (more than two days per year).
- Teachers most frequently attended training emphasizing basic technology applications (93%), use of the Internet (92%), and administrative record keeping (87%), with these topics emphasized to a *moderate* or *large* extent in sessions.
- Opportunities supporting curricular integration are less prevalent. Although substantial percentages of teachers report attending sessions on lesson plan development (73%) or in-depth theories and methods supporting curricular integration (56%), training typically emphasized these topics to only a *small extent*.
- In the last five years, technology-related training for Texas teachers was seldom delivered through telecommunications. About 30% of teachers have participated in an online session, 15% attended technology training delivered via videoconferencing, and 11% report completing online university coursework.
- Teacher participation in online and videoconferencing sessions varies by school characteristics. As instructional level increases, teachers more often participate in these formats. In addition, teachers in smaller districts and campuses more often receive training online or through videoconferencing sessions.
- In identifying teachers' greatest needs, principals most frequently cite the need for additional professional development targeting the creation of lesson plans integrating technology (59%). Fewer principals identified using the Internet (11%), technology for basic skill acquisition (12%), or administrative record keeping (20%) as a need.
- Teachers' technology training needs vary by instructional level. Secondary principals most often cite a need for teacher training on the one-computer classroom, advanced telecommunications, and in-depth curricular integration theories, whereas more elementary principals identify teacher need for basic technology applications training.
- Teachers' technology training needs differ by school size. As school enrollment increases, principals more often report a need for teacher training on creating content-specific lesson plans, integration in the one-computer classroom, and in-depth theories supporting integration. In contrast, principals in smaller campuses and districts more often cite the need to train teachers on basic technology applications, applications for student basic skills, and advanced telecommunications.
- Teachers' technology training needs also reflect the student populations served. As the percentage of economically disadvantaged students increases, principals note greater teacher needs in basic technology applications and administrative tasks. Conversely, as student economic disadvantage decreases, principals more often identify more advanced technology training needs targeting integration issues (electronic lessons plans, one-computer classroom integration, in-depth integration theories, telecommunications).

Administration and Support Services

- Large percentages of Texas principals and teachers report technology-related support from district technology coordinators (89% and 67%, respectively) and campus technology coordinators (72% and 78%, respectively). Additionally, more than half of principals and teachers note technology support from media specialists and expert/mentor teachers.
- Important technical support differences emerge by school size. As district and campus enrollment increases, teachers more often report receiving technology-related support from a district instructional specialist and on-site support from campus technology coordinators, media specialists, and expert teachers. Conversely, as district and campus enrollment declines, teachers more often receive support from a district technology coordinator.
- The proportion of economically disadvantaged students in a school is also related to technology support. Teachers in campuses enrolling 25% or less low-income students are significantly more likely to report support from a district instructional specialist as well as on-site technology-related support than teachers in schools with more economically disadvantaged students.
- In districts that received direct TIE funding, teachers are more likely to report technology support from expert or mentor teachers.

Infrastructure for Technology

- Technology resources in Texas schools and classrooms have increased substantially in the past five years, with the percentage of principals reporting computers as available in classrooms increasing from 89% to 100%. Classroom Internet access expanded even more—five years ago, only 37% of principals cited at least one Internet connection per classroom; currently, 99% of principals report that classrooms have at least one Internet connection, and classrooms average more than 4 drops per room.
- Additionally, both classroom and school availability of media center computers, computer labs, peripherals, and other technologies have improved over the past five years, with increases often attributed to TIE funding. Library/media center computer access improved from 3.5 to 10.0, and emerging technologies such as videoconferencing and mobile laptop carts, which rarely existed five years ago, are available on about a third of campuses.
- Although teachers tend to report greater technology availability at the school rather than classroom level, a substantial percentage of classrooms have printers (83%) and projection devices (64%) such as a liquid crystal display (LCD) unit or television monitor.
- The majority of Texas students have a computer (79%) and Internet access (69%) at home—however, disparities exist among racial/ethic groups. While more than 90% of White and Asian students report home computers, only 74% of African American and 63% of Hispanic students have a home computer. Internet access differences are even more extreme—although 90% of Asian and 83% of White students are connected, only 61% of African American and 49% of Hispanic students have home Internet access.
- Student home technology access differences also emerge by school characteristics. As the percentage of low-income students in schools increases, access to home computers and the Internet steadily declines. Thus, students in schools serving the least low-income students (25% or less) have the greatest access (92% reporting computers and 85% citing Internet), while students in schools serving 75% or more low-income students are least likely to have home access (57% reporting computers and 42% note Internet access).

Source: Technology Integration in Education (TIE) Initiative Statewide Survey Report, Texas Center for Educational Research, September 2002.

Funding Level

1997	15.5M	191 school districts
1998	33M	452 school districts
1999	33M	419 school districts
2000	33M	258 school districts
2001	36M	335 school districts

No Child Left Behind Act of 2001: Reauthorization of the Elementary and Secondary Education Act

On January 8, 2002, President Bush signed into law the *No Child Left Behind Act of 2001*. The Act is the most sweeping reform of the Elementary and Secondary Education Act (ESEA) since ESEA was enacted in 1965. It redefines the federal role in K-12 education and will help close the achievement gap between disadvantaged and minority students and their peers. It is based on four basic principles: stronger accountability for results, increased flexibility and local control, expanded options for parents, and an emphasis on teaching methods that have been proven to work.

Title II, Part D—Enhancing Education Through Technology

President Bush and Congress have declared their commitment to transforming the Federal role in education so that "No Child is Left Behind." At the heart of this effort is a commitment to focus on students, equip teachers, empower parents, and inform decision makers to ensure every child receives a quality education. The *No Child Left Behind Act of 2001* advances this commitment by providing a number of exciting reforms, tools and programs, many of which are reliant on the appropriate and effective use of technology.

Experts and practitioners have all agreed on the importance of not just increasing technology capacity within schools, but integrating it with the curriculum. The *No Child Left Behind Act of 2001* reflects this commitment in several exciting ways:

- **Education programs as technology opportunities:** Along with targeted funding for technology, many of the education programs, such as Reading First, allow recipients to purchase technology resources to accomplish the program's goals.
- **Commitment to professional development:** A myriad of programs offer funds for professional development to ensure teachers understand how to integrate appropriate technology tools effectively with their curriculum. Additional resources are made available for teacher preparation initiatives.
- **Flexible uses of funds:** States, for example, may use funds for inter-state distance learning partnerships, data decision support systems, and even forming public-private partnerships that support activities such as interest-free loans.
- **Evidenced Based Education:** Throughout the *No Child Left Behind Act of 2001* is a commitment to funding strategies that have been proven to work based on scientifically based research. A commitment to researching what works along with measuring the impact technology has on instruction and learning is evidenced by the focus placed on state evaluations along with a national multi-year study intending to explore the conditions needed for effective use of technology.

Title II Part D Purposes

1. To provide assistance to states and localities for the implementation and support of a comprehensive system that effectively uses technology in elementary schools and secondary schools to improve student academic achievement.
2. To encourage the establishment or expansion of initiatives, including initiatives involving public-private partnerships, designed to increase access to technology, particularly in schools served by high-need local education agencies.
3. To assist states in the acquisition, development, interconnection, implementation, improvement and maintenance of an effective educational technology infrastructure in a manner that expands access to technology for students (particularly disadvantaged students) and teachers.
4. To promote initiatives that provide school teachers, principals, and administrators with the capacity to integrate technology effectively into curricula and instruction that are aligned with challenging State academic content and student academic achievement standards through such means as high quality professional development programs.
5. To enhance the ongoing professional development of teachers,principals and administrators by providing constant access to training and updated research in teaching and learning through electronic means.
6. To support the development and utilization of electronic networks and other innovative methods, such as distance learning, of delivering specialized or rigorous academic courses and curricula for students in areas that would not otherwise have access to such courses and curricula, particularly in geographically isolated regions.

7. To support the rigorous evaluation of programs funded under this part, particularly regarding the impact of such programs on student academic achievement, and ensure that timely information on the results is widely accessible through electronic means.
8. To support local efforts using technology to promote parent and family involvement in education and communication among students, parents, teachers, principals, and administrators.

GOALS

- To improve student academic achievement through the use of technology in elementary schools and secondary schools.
- To assist every student in crossing the digital divide by ensuring that every student is technology literate by the time the student finishes the eighth grade.
- To encourage the effective integration of technology resources and systems with teacher training and curriculum development to establish research-based instructional methods that can be widely implemented as best practices by State education agencies and local education agencies.

This section of the NCLB legislation combines several previous technology programs into a single State EdTech program. Funds are allocated to States who distribute 50% to schools through a formula program and 50% through a competitive grant program. At least 25% of the funds must be used for high-quality professional development to prepare teachers to integrate technology into the curriculum. The **TARGET** Grants (**T**echnology **A**pplications **R**eadiness **G**rants for **E**mpowering **T**exas students and teachers initiative) are the state's implementation of the competitive grant program. Beginning in January, 2003, TARGET grants will focus on serving high need students by accelerating implementation of the recommendations in the *Long-Range Plan for Technology, 1996-2010* and are correlated to the *Texas STaR Chart*.

Funding Level

FY 2002	$50,721,663
FY 2003	$51,195,091 (estimate)

Infrastructure for Technology

Executive Summary

Texas has made tremendous strides during the last half-decade in connecting schools to each other, to external resources, and to the Internet. Texas schools have been fortunate to have the support of the Texas legislature and the federal government in building the technology infrastructure for schools through direct funding, grants, and discounts. As a result of these resources, as well as local efforts, districts have begun to build the infrastructure that will allow students and teachers to make use of technology tools that are basic and necessary for educating students today and in the future.

Currently, the student to computer ratio in Texas schools is 4 to 1. Of course that is the statewide average. Some schools have a laptop or desktop for every student while others are lucky to have one for every classroom. Many teachers have a laptop or desktop they call their own but others have to wait in line in the library or teachers' lounge to use a computer. All districts and 99% of all campuses have connectivity to the internet but not all have the technology and training to take advantage of this connectivity. Improvements in infrastructure have seen significant change over the past two years but challenges clearly remain. Not all districts, campuses, and classrooms, have the connectivity and tools that they need to integrate technology into the teaching and learning process. Work remains to ensure that connectivity reaches all instructional and professional work areas, and that infrastructure capacity supports promising practices in instruction, school leadership, and operations.

Distance learning technologies are also increasing in Texas schools. Satellite, instructional television, videoconferencing, and web-based distance learning bring for-credit courses, electronic field trips, and online professional development into our schools. Students are able to take a foreign language, advanced math or science, or AP class via technology. This provides opportunities for students in rural schools where those teachers are not available or urban and suburban districts where course schedules make it difficult for students to access these courses. Virtual schools and web-based learning are growing as students and teachers seek to take advantage of any time—any place learning. As the infrastructure in our schools increases, equity of access to learning opportunities becomes a reality for all of our students.

> A total of 877 districts are connected to the ESC Regional Networks and are accessing the Internet via these connections.

Source: ESC Annual Accountability Report

Issues of support and maintenance for existing and evolving technologies will test our true commitment to connected schools. Maintaining appropriate funding levels, securing and retaining qualified staff, maintaining the infrastructure, providing upgrades and greater bandwidth, all provide significant challenges for schools. The infrastructure of a school is the critical element of support for all four areas: administration, teaching and learning, and educator preparation and development. While school connectivity presents tremendous challenges, implementing that connectivity offers new and exciting opportunities for transforming the institution of schooling.

Texas School Telecommunications Access Resource (T-STAR)

Initiative

Integrated Telecommunications System
TEC 32.033

Description

The Integrated Telecommunications System includes T-STAR. Established in 1990, The Texas Schools Telecommunications Access Resource (T-STAR) is a statewide telecommunications initiative that provides television communications (one-way video/two-way audio via satellite) to school districts, regional education service centers (ESCs) and the Agency. T-STAR delivers a wide choice of distance learning opportunities from TEA and programming providers across the U.S.

Texas students and educators can use T-STAR to expand their curriculum and educational resources through satellite delivered for-credit courses, K-12 curriculum enhancement programming and electronic field trips, and professional development teleconferences from programming providers across the country. They can also access over 200 hours of professional development throughout the school year from the Texas Education Agency. Administrators and teachers can receive continuing professional education credits for Standard Certificate renewal from viewing T-STAR programming.

A digital uplink has been installed at the William B. Travis Building in Austin and digital capabilities have been added to the downlinks at all 20 ESCs, over 350 school sites and the T-STAR Network studio facilities. Many districts are in the planning stages to upgrade their T-STAR satellite system to receive digital video programming.

T-STAR's digital broadcast transmission has given the ESCs and districts sites, the ability to deliver T-STAR programming to the computer desktop through Internet Protocol Television (IP/TV). *T-STAR to the Desktop* has been implemented at the Texas Education Agency and provides the agency with the live T-STAR programs as well as video on demand programming. Education Service Center, Region 20, in San Antonio piloted *T-STAR to the Desktop* by delivering for-credit distance learning courses. This pilot was used to determine how to produce programming for the computer desktop and to measure the level of support that will be necessary for district sites.

The T-STAR Network provides teachers with options and resources to obtain continuing professional education. Administrators and teachers receive continuing professional education credits for Standard Certificate renewal through T-STAR CPE Online. Educations certified after 1999 must meet new certification requirements which include continuing professional education hours. Designated CPE video programming produced by T-STAR offers educators accessible professional development at no cost.

CPE Focus

All educators certified after 1999 are required to receive and document continuing education credits. T-STAR CPE Online was created to help Texas educators meet their certification requirements. T-STAR is offering more quality shows to assist educators acquire their professional development. To further aid T-STAR CPE Online users, selected CPE professional development programs will be made available to view online through the T-STAR web site.

The process is for registering is easy for teachers and administrators. Register at: www.t-star.org/cpeonline, watch a T-STAR designated CPE program, and log on to the CPE web site to complete a short verification process.

Once completed users can print out a certificate for the program they viewed or they can print out a transcript of all programs they have viewed. Users will receive CPE credit for the length of the program plus an additional 15 minutes for the time it takes to log in and complete the verification.

With T-STAR CPE Online, teachers can receive staff development without leaving their classrooms. Southside ISD is a small school district with 300 teachers located south of San Antonio. A Southside High School teacher, says T-STAR is the key to balancing the demands of being a teacher and a parent. "T-STAR enables me to receive CPE hours without spending extra time away from my family and it's easy to access from any Internet connected computer."

> ***I have been getting great feedback from the students and their teacher. They take great delight in T-STAR and look forward to each broadcast.***
>
> Novice ISD

T-STAR CPE Online provides teachers and districts with efficient options for their staff development plans. Dr. Sharon Doughty, Assistant Superintendent for Curriculum and Instruction at Southside ISD states, "there are numerous accessible tools for teachers and T-STAR is just another valuable resource. T-STAR has an excellent curriculum line-up of programming."

T-STAR allows for real-time learning. Teachers have the opportunity to view T-STAR programming at their own convenience. It also enables educators an opportunity for an individual approach to create their own professional growth plan.

For additional information on certification areas and requirements, see the Texas State Board of Educator Certification at www.sbec.state.tx.us. T-STAR CPE Online is supported through the T-STAR Information and Training Center.

> ***I'd give a total thumbs up! And on a scale of 1-10, I would give T-STAR a 10.***
>
> Alvarado ISD

IP/TV Focus

The T-STAR digital satellite broadcast consists of two transmissions. The main broadcast transmission is the digital video television transmission. This high speed signal is high in quality, equal in to commercial television digital broadcasts as seen on cable TV channels. The other T-STAR digital broadcast is a low speed 384 kbps IP multicast television signal. This low speed signal is the same broadcast content video and audio as the high speed signal but is intended for display on a the computer desktop through a district's local area network.

This IP multicast 384 kbps T-STAR video and audio signal is provided through the interconnection located on the back of the General Instruments DSR 5200V receiver or using the Viacast unit with the General Instruments DSR 406. These can be programmed for interconnection to the LAN, and the IP/TVT-STAR signal can be displayed on as many desktop computers on the LAN as desired using the Cisco IP/TV viewer. IP Multicast is a one-way transmission and does not provide for any interaction with the video.

T-STAR's digital broadcast transmission has given the ESCs and districts sites the ability to deliver T-STAR programming to the computer desktop through Internet Protocol Television (IP/TV). The Texas Education Agency has implemented IP/TV, *T-STAR to the Desktop*, for professional development purposes. The division of Staff Development at the Texas Education Agency provides video training and staff development to the Agency's computer desktops. This allows the employees to view the programs at their own convenience.

Education Service Center, Region 20, in San Antonio has used T-STAR to the Desktop for the last two years by delivering for-credit distance learning courses and professional development. The success of the T-STAR programming access in San Antonio has produced a state-wide IP/TV implementation support for Education Service Centers and school districts in Texas. This service is supported through the T-STAR Information and Training Center and will be used to standardize ESC and district network equipment as they implement IP/TV to the computer desktops.

Purpose

- T-STAR Network broadcasts more than 225 hours of educational professional development programming
- Provides access to student for-credit courses, video curriculum enhancement, electronic field trips, and staff development
- Supplies Texas teachers an opportunity to gain continuing education credits to be applied to Texas teacher certification
- Offers scholarships for student satellite delivered distance learning for-credit courses
- Digital equipment upgrade delivers the capability to distribute T-STAR programming to the computer desktop
- Links more than 1,000 Texas school districts, all 20 Education Service Centers, and Texas Education Agency

Funding Level

FY 1996	$2,250,000
FY 1997	$1,750,000
FY 1998	$1,750,000
FY 1999	$2,000,000
FY 2000	$3,000,000
FY 2001	$2,000,000
FY 2002	$2,250,000
FY 2003	$2,265,000

Texas Education Telecommunications Network (TETN)

TEC 32.033

Description

The Integrated Telecommunications System also includes TETN. The Texas Education Telecommunications Network (TETN) is a statewide educational network, established in 1995, providing compressed, two-way video/audio videoconferencing, audio communications, and data transfer capabilities between TEA and all 20 regional ESCs via dedicated T1 lines, with the capabilities to connect to schools and other public institutions. TETN is a cooperative effort among the twenty education service centers (ESCs) and the Texas Education Agency. The mission of TETN is to facilitate communication among educational entities throughout Texas to improve student performance and increase efficiency of educational operations via an effective telecommunication network.

There are four components that form the building blocks of the integrated telecommunications network throughout the K-12 public school community in Texas; the use of the commodity Internet, the Texas Education Telecommunications Network (TETN), the Texas School Telecommunications Access Resource (TSTAR) and regional networks developed by education service centers. These four components are part of the strategic plan to implement TEA's *Long Range Plan for Technology, 1996-2010.*

TETN is a private video/data network among the twenty education service centers and TEA. Direction of TETN is vested in a ten (10) member Governing Committee consisting of five members from TEA and (5) members of the Commissioner's Cabinet for Regional Services (CCRS). Region XIII is the fiscal agent of the network and is responsible for the cooperative budget and the TETN Office.

The wide-area network is comprised of point-to-point T1s connecting the TETN hub equipment, located in the William B. Travis building, to each charter site. The T1 lines and the hub's DS3 circuit are leased from the Telecommunications Division of the Department of Information Resources.

TETN is used mainly for H.320 videoconferencing. Since the deployment of ATM and the upgrade of the endpoints, H.320 conferences run at 512kbs per second. Members interconnect their regional video network multi-point conference unit (MCU) and LAN to the TETN network. Members may schedule their endpoints (school districts) to participate in TETN conferences. A pilot project was implemented in the fall of 2002 to allow distance-learning classes between school districts in different regions using a 384kbs connection.

Services on the TETN network include:

- Multi-party/point-to-point H.320 videoconferences between ESCs, school districts and TEA.
- Professional development classes via non-member entities.
- IP transport.
- Video dial-up services for non-members wanting to participate in a statewide conference.
- Toll-free telephone calls among the TETN members.
- Toll-free phone and fax between the TETN rooms at each member site.
- H.323 pilot project.

Purpose

The purpose of TETN is to facilitate communications among these key educational entities throughout the state and to make it possible for more information, training, and data to be shared while simultaneously reducing costs and time lost due to travel.

TETN is used for: electronic meetings and panel discussions, professional development and training, for-credit courses, TETN provides a dedicated telecommunications infrastructure between regional education service centers and the Texas Education Agency addressing the expanding need to exchange information and improve communication.

TETN has been enhanced to provide an ATM telecommunications environment that supports the interactive transfer of audio, video, and data between TEA, the ESCs, districts, individual campuses, and other public institutions.

TETN improves communications, and reduces travel expenses and staff travel time for schools, regional education service centers and TEA. TETN is also used for electronic transfer of school data between regional education service centers and TEA.

The enhancements to TETN will facilitate interconnection with regional and district networks and maximize the public education system's use of the telecommunications environment.

Staff from 688 sites connected to TETN through the Regional Networks received training in the use of TETN.

Source: ESC Annual Accountability Report

Funding Level

FY 1996	$ 200,000
FY 1997	$ 50,000
FY 1998	$ 950,000
FY 1999	$1,600,000
FY 2000	$1,100,000
FY 2001	$ 600,000
FY 2002	$ 125,000
FY 2003	$ 135,000

Public Access Initiative
P16 Public Education Integrated Data Resource

Description

The P16 Public Education Integrated Data Resource (P16 PEIDR) is a collaborative effort between the Texas Education Agency, Texas Higher Education Coordinating Board, and the State Board for Educator Certification to improve public access to pre-kindergarten through grade 16 enterprise information for decision making by public education stakeholders. This project builds upon the current Data Central and Internet Portal to provide integrated pre-kindergarten through grade 16 resources by expanding the the current data warehouse and data marts technology infrastructure.

When visitors browse the current Data Central, also known as the Resource Connection, they will find a rich, easy to use resource of data and information drawn from major agency databases such as PEIMS and TAAS. Unlike PEIMS Core Reports and most agency presentations of data, Data Central provides reports that:

- Show data over time—six years of student data and seven years of financial data
- Present comparative data—simultaneous displays of data for more than one school district
- Allow visitors to create and save self defined peer groups for comparison and analysis
- Provide information in both graphical displays and standard report formats
- Allow point and click transfer of data to the requestor's PC for their use in further analysis
- Display campus, district, regional and state information
- Let visitors find a district through a map as well as a district name

The P16 PEIDR is expanding the current resources to include Texas Higher Education public enrollment, attendance, graduation, financial and faculty data and State Board for Educator Certification education staff credential data.

Data Central/Resource Connection is the source for the new Longitudinal Student Performance Record (LSPR), which provides requesting districts detailed demographic, membership and testing data from both PEIMS and TAAS—including item scores—for every student in their district. The LSPR data, when coupled with district-held information about teacher assignments and class schedules, enables sophisticated analysis of student performance at the classroom level. More than 600 districts a year download this data via secure Internet access on the state Texas Online portal.

The Teacher's Tool Bag is a rich resource for educators, providing instantaneous links to online resources such as TEKS lesson plans, awards and special programs, reference sites, and professional development. Curriculum resources are easy to find, as they are organized by content area and by grade. Educational resources include the Book Bag, classroom management strategies and lesson plan collections. The Teacher's Tool Bag also includes quick links to Top Pick sites such as the Centers for Educational Development, as well as to such Agency sites as AskTED, Educational Technology, TEKS and AEIS. The Teacher's Tool Bag also includes links to individual district and ESC web sites.

More than 2000 visits a day are made to Data Central/Resource Connection and the Teacher's Tool Bag. Anyone with a web browser and an Internet connection can visit both Data Central/Resource Connection and the Teacher's Tool Bag. (http://lucas.tea.state.tx.us/PAI)

Funding Level

FY 1998	$ 1,850,000*
FY 1999	$ 2,000,000**
TIF grant (FY 2000-FY 2001)	$10,135,000
FY 2002	$ 3,500,000
FY 2003	$ 3,500,000

*The FY 1998 funding level includes $850,000 in IBM Reinventing Education 2 grant funds and $1,000,000 of Agency discretionary funds.

**The FY 1999 funding is from Agency discretionary funds.

Education Service Centers

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Executive Summary

School districts across the state can turn to the education service center (ESC) in their area for technology services that enhance efficiency, effectiveness and the performance of students, teachers and administrators. Each of the state's 20 ESCs must provide planning, consultation, professional development and technical assistance in response to district needs and in support of the State Board of Education's *Long-Range Plan for Technology, 1996-2010.* Development of collaboratives and partnerships, regional network development and operation, education resources preview centers, training and professional development services, support of the Texas Library Connection (TLC) and other statewide technology initiatives, planning and grant development, and distance learning opportunities are among the desired outcomes of the technology services provided to schools by the ESCs. The Texas Education Agency's Educational Technology Division assists the ESCs with financial support.

No two ESCs are alike. They reflect the incredible diversity of Texas schools, communities and learners and the enormous differences in geographic and demographic conditions across the state. All 20 ESCs have an identical mission. The strategies to best fulfill that mission vary with each ESC. Local needs, interests and capabilities determine the regional technology programs designed by the ESC. The range of creative and effective ways ESCs interact with their districts and build on local initiatives to accomplish their mutual goals is highlighted in their web sites.

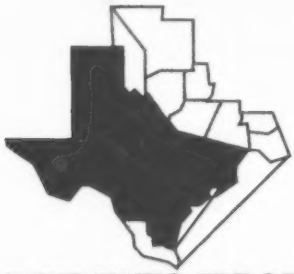
Technology professional development is one of the most important services provided by ESCs. Each ESC designs an array of professional development offerings to meet the varied needs of the educators in its service area. In addition to the many technology workshops offered by each ESC throughout the year, customized training can be provided to meet the specific learning needs of individual school districts. Educators can learn the basics of technology use, explore strategies for integrating technology across the curriculum, find educational resources on the Internet, receive training on specific software packages, and attend TIFTech training provided by their ESC. Hands-on, face to face training is available as well as training via multiple technologies. Educators can view the professional development opportunities available from their ESC through the ESC's Web-based catalogs and can register online for selected work-shops.

Districts receive critical assistance from ESCs as they embrace new models of teaching and learning based on a 21st century vision of what learners can accomplish using educational technology. ESCs offer tools and training that allow students to increasingly take charge of their own learning and enable educators to help them do so in meaningful ways. For example, ESCs assist schools in supporting and maintaining their computer equipment. High school students learn troubleshooting techniques for PCs, as well as how to build computers and small local area networks (LANs) in workshops offered by a number of ESCs. Through this program, students can take training that leads to industry standard certification.

Secure and affordable local regional networks have been developed by all 20 ESCs for educators to use for everything from the development and sharing of lesson plans to e-mail, and from Internet access to job searches—and ESCs have taught them how best to utilize these networks. ESCs are developing a growing base of educators who can support technology at the campus level through their training efforts directed at key district and ESC personnel. ESCs also maintain technology centers for preview and checkout of software and other media, as well as assistive equipment for students with disabilities. In addition, they create and update important administrative and management software and data tools that aid business practices and help educators monitor and adjust instruction to meet student performance accountability standards.

Distance learning capabilities are provided by ESCs through a growing variety of mediums: Internet, videoconferencing, satellite or a blending of several delivery mechanisms. These distance learning opportunities are especially helpful to small, poor or isolated districts—providing students with access to specialized offerings previously unavailable in their schools. These offerings include courses needed to complete the Recommended High School Graduation Plan, dual and concurrent credit courses, Advanced Placement and International Baccalaureate courses, enrichment and career programs, electronic field trips and bilingual instruction. Through distance learning, districts lacking instructors in hard-to-find science, math, foreign language, or technology courses may pool their resources and hire teachers jointly for videoconference classes received at multiple sites. Distance learning also provides educators with access to high-quality, on-demand professional development and continuing education opportunities. School personnel can participate in meetings, study groups and forums without leaving their campuses. School board members benefit from training delivered electronically, as do parents and community members who may meet with educators via technology.

ESCs are critical to providing ongoing training and support for statewide technology initiatives, including T-STAR and TLC and they serve as important resources for districts seeking funding via TIF or TARGET grants and E-Rate. ESCs frequently establish and maintain partnerships with software and hardware vendors, colleges and universities, and other ESCs that support statewide technology initiatives and benefit Texas schools. The 20 ESCs play a key role in assisting districts and the state in reaching the goals of the *Long-Range Plan for Technology, 1996-2010.*



"STUDENTS FIRST"
REGION ONE
EDUCATION SERVICE CENTER

Region 1 Education Service Center
Edinburg, Texas • 956-984-6000 • www.esc1.net

Region 1 Education Service Center (ESC-1) encompasses nine thousand square miles in seven South Texas counties: Cameron, Hidalgo, Jim Hogg, Starr, Webb, Willacy, and Zapata. More than 315,000 students attend schools in the region's 48 school districts. The student population in Region 1 increased by 4% compared to the past academic year.

DEMOGRAPHICS	
Number of Districts	48
Number of Students	315,910
Hispanic Students	95.9%
Economically Disadvantaged	84.2%
Limited English Proficient	37.8%
At-Risk	62.4%
Migrant	11.1%

A glance at the Region 1 demographics could lead some to believe that academic success is out of reach for many of these students and their school districts because of the strikes against them. However, this is not the case. Students have proven that if they are given the opportunity, they will excel academically. The 2000-01 Accountability Report released by the Texas Education Agency (TEA) reveals that 19 school districts in Region 1 received a Recognized rating (up from 15 last year) and six received an Exemplary rating (up from 5 last year), the highest honor bestowed by TEA. It is our primary goal at Region 1 ESC for every district to receive either a Recognized or an Exemplary rating.

At Region 1 ESC, we believe student access to technology resources is a right, not a privilege. Our Technology Plan reflects the goals and objectives that make access to technology a reality for all students.

Teaching and Learning

The goal of Region 1 ESC is to provide school districts with the technology and curriculum resources necessary to meet the learning needs of today's students. To achieve this goal, existing services have been enhanced and a variety of new services developed. ESC-1 continues to develop new services and encourages educators to think "out of the box" when investigating ways in which educators can positively impact student learning. Region 1 supports district technology efforts through a variety of initiatives, including the following:

- Integration of Technology Application TEKS into district curriculum.
- Coordination of Instructional Resources and Media Cooperative.
- Digital video services.
- Online virtual preview center.
- Implementation and support of TEKSTAR, a series of digital resources that teachers can use for lesson preparation and delivery.
- Use of ESCONETT, the regional network, a high speed, high performance intranet for the K-12 environment.
- Various technology advisory committees for disseminating information, providing best practices presentations, networking and collaborating, and receiving feedback.

Educator Preparation and Development

Region 1 is committed to helping all teachers integrate the Technology Application TEKS into their content areas and ensuring all high schools are offering at least four of the eight Technology Applications courses at the high school level. To support this effort, Region 1 provides the following professional development opportunities:

- Our new Technology Academy, which includes a teacher assessment component and modules for training of trainers, high school technology applications, and technology integration for all levels.
- TIF Tech Training.
- Technology planning training.
- Annual technology conference.
- Texas Library Connection (TLC) training.
- T-STAR training.
- Assistive/adaptive technology training.
- Regional Cisco Academy support.
- Technical training for district staff responsible for maintaining district infrastructure.
- Availability of multipoint videoconferencing equipment for delivery of instruction and training.

Region 1 has the option of delivering training in our Professional Development and Technology Center for teacher training. This state-of-the-art facility is equipped with distance-learning capabilities in each of the six meeting rooms. The facility has three computer labs and one wireless laptop lab which can be used for professional development in virtually any location.

Administration and Support Services

One of the objectives of Region 1 ESC is to help school districts operate more efficiently and effectively by providing technical support and professional training in the student and financial accountability arena. Information tools available through PEIMS and AEIS can be great assets to educators when gathering and analyzing data regarding student performance and district financial accountability. ESC-1 provides the technology tools and resources and assures that staff members receive the training to maximize their use. These efforts include:

- Collaborating with districts to consolidate data transmissions.
- Using existing networks in a secure and economical manner.
- Developing specialized reports to increase data accuracy and its analysis.
- Increasing capabilities of districts to develop data projections.

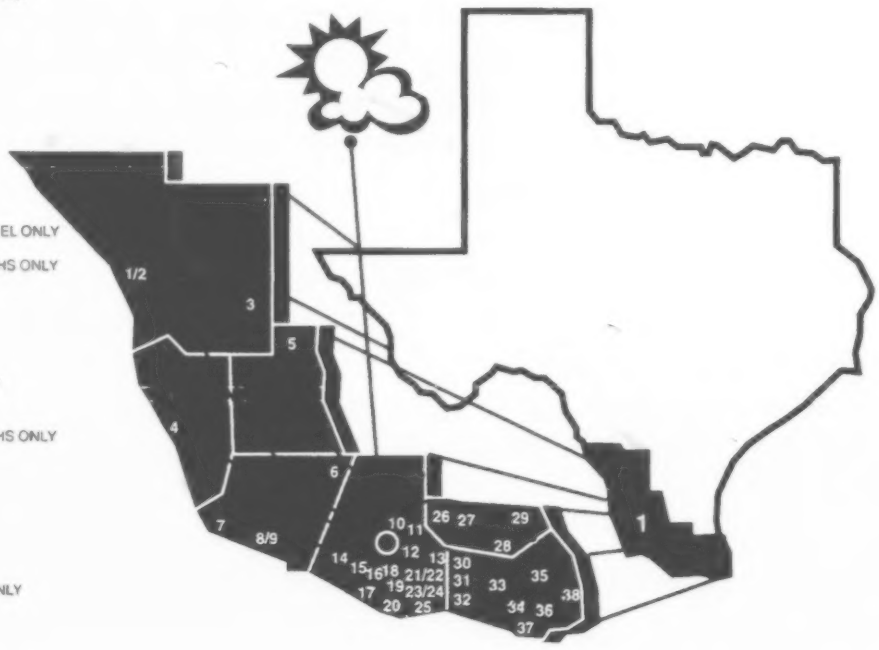
Infrastructure for Technology

The Region 1 network, referred to as ESCONETT, connects more than 200 campuses in the region. Almost half of these sites also have videoconferencing capabilities. ESCONETT has connectivity to the University of Texas–Pan American, the University of Texas–Brownsville, South Texas Community College, and Texas State Technical College. Region 1 ESC and our districts use ESCONETT for a variety of services including:

- High speed Internet access.
- Distance-learning support, including concurrent enrollment.
- The ability to integrate voice, video and data traffic on the network.
- Training school district personnel in technical areas.
- Facilitating access to normally costly services, content, and software at greatly reduced rates.
- Providing technical support on network design, implementation and maintenance for schools.
- Providing connectivity to TETN for districts connected to ESCONETT with videoconferencing capabilities.

Region One ESC

WEBB COUNTY
1-United ISD-Los Obisbos MS / LBJ HS ONLY
2-Gateway Academy
3-Webb CISD
ZAPATA COUNTY
4-Zapata ISD
JIM HOGG COUNTY
5-Jim Hogg County ISD
STARR COUNTY
6-San Isidro ISD-San Isidro JH ONLY
7-Roma ISD
8-Rio Grande CISD
9-Immaculate Conception
HIDALGO COUNTY
10-Edinburg CISD
BL Garza MS / Edinburg N. HS / Hargill EL ONLY
11-Monte Alto ISD
12-Edcouch-Elsa ISD-Edcouch-Elsa JH & HS ONLY
13-La Villa ISD
14-Mission CISD
15-Sharyland ISD
16-McAllen ISD
17-Hidalgo ISD
18-PSJA ISD-PSJA LBJ MS / PSJA HS /
PSJA Memorial HS / PSJA N. HS ONLY
19-Donna ISD
20-Valley View ISD
21-Weslaco ISD-Central MS / Weslaco E. HS ONLY
22-Technology Education
23-Mercedes ISD
24-Mid-Valley Academy
25-Progreso ISD
WILLACY COUNTY
26-Lasara ISD-Lasara EL ONLY
27-Raymondville ISD
28-Lyford ISD
29-San Perlita ISD-San Perlita EL & MS ONLY
CAMERON COUNTY
30-Santa Rosa ISD
31-La Feria ISD
32-Santa Maria ISD
33-Harlingen CISD-Keys Academy ONLY
34-San Benito ISD-Miller Jordan MS / San Benito HS ONLY
35-Rio Hondo ISD
36-Los Fresnos CISD
37-Brownsville ISD-Lucio MS / Sharp EL ONLY
38-Point Isabel ISD



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Region 2 Education Service Center
Corpus Christi, Texas • 361-561-8400 • www.esc2.net

Region 2 Education Service Center (ESC-2) serves 42 school districts and seven charter schools in an 11-county area as diverse as Texas itself. More than 60% of the population is Hispanic, resulting in a unique and fascinating multicultural ambience. Included in the region is the largest working ranch in the world, the sixth-busiest port in the U.S., three major U.S. Navy bases, and a national seashore. Corpus Christi is the seventh-largest city in Texas and fronts one of the most beautiful bays on the Gulf of Mexico. The region is bordered by the longest barrier island in the world and an ecologically valuable bay and estuary. Even though the area's population is expected to double in the next 50 years, Region 2 at the present is almost exclusively rural, with significant agricultural production.

One goal of ESC-2 is to help districts and campuses apply technology to both instructional and administrative functions. While funding is still a primary barrier to implementing technology in schools, grant funds have significantly increased the availability of computers and connectivity available to students. Districts have expressed the need for proper training and support for teachers in order for technology to be used effectively in the classroom.

Teaching and Learning

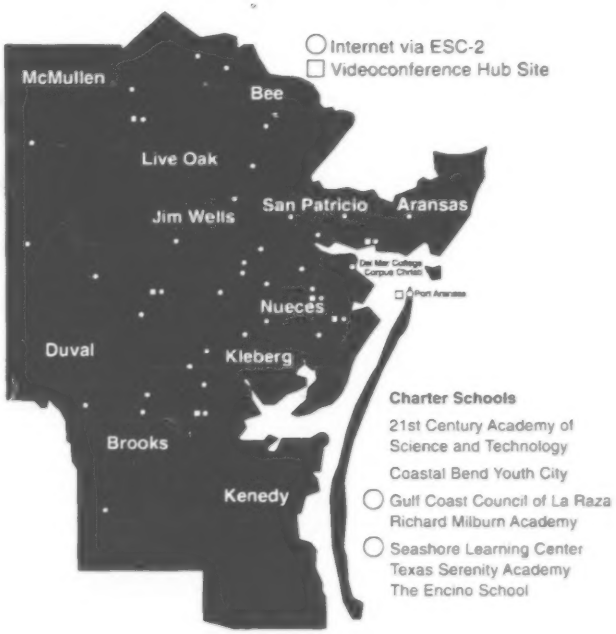
Educators in Region 2 seek innovative ways to integrate technology into their classrooms. Trends in workshop attendance and requests from district staff members indicate that more training is needed in advanced use of software applications and Internet resources, while fewer are needed in basic skills.

In addition, teaching and learning are enhanced through several innovative programs and services offered by ESC-2:

- **TLC/Library Cooperative** - The ESC-2 regional librarian provides inservice training for librarians and media specialists, hosts regular meetings, provides telephone assistance, and manages a library cooperative that allows on-site assistance with a multitude of tasks and issues.
- **T-STAR** - Region 2's Media Manager keeps constant vigilance to ensure timely, relevant information and services, including distance-learning information; help with electronic registration for field trips; and satellite troubleshooting via telephone and on site.
- **AEIS-IT** - Provides demonstrations,–on-site training sessions, and technical support for this valuable data disaggregation and instructional management tool, including help with DEC reports.
- **Preview Center** - The Preview Center area was expanded and relocated to a higher traffic area. Two 16-station computer labs were upgraded to 20 workstations each. An additional 20-workstation computer lab with presenter station and projection device was installed. The wireless Imac lab was made mobile for ease of use in any training room.

Educator Preparation And Development

Acutely aware of the technology standards for beginning teachers developed by the State Board for Educator Certification (SBEC), Region 2 carefully plans training sessions that incorporate the skills and knowledge needed



for successful integration and use of technology in student learning. The Instructional Technology team monitors and revises sessions continuously, and has completely reorganized and rewritten offerings for 2002-03.

The Educator Preparation and Certification Program at ESC-2 for principals and teachers has increased its emphasis on demonstration of technology proficiency. These programs now require participants to use electronic media including e-mail, the Internet, and CD-ROMs. Web sites are used to supplement content, and videoconferencing is used to monitor participants. Technology Applications Certification training begins in August.

ESC-2 now brings together all available technologies to deliver content to large numbers of participants at multiple locations, using multiple instructors. Eight distance-

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learning sites are now operational, including those added this year in Port Aransas and Flour Bluff ISDs. The ESC is purchasing equipment for additional distance-learning sites to be located at Mathis, Tuloso-Midway, and Agua Dulce ISDs.

In addition, ESC-2 supports the following technology-based services:

- **Internet** - Upgraded ESC-2 web site used for information dissemination, online workshop registration, and training. (See www.esc2.net/intclass). Consultant sites include workshop tutorials, presentations, and handouts: (See faye.esc2.net).
- **TETN** - Hosts meetings and training sessions via statewide videoconferencing system.
- **Technology Cooperative** - Individualized assistance to school districts. Provides on-site services in the areas of technical assistance, administrative support and professional development.
- **Videoconference** - Offered 11 courses for the fall and spring semesters. High school credit, dual credit and concurrent enrollment credits were made available to students. These offerings continue to grow.
- **Professional Development** - Numerous professional development opportunities focus on computer applications and integration models such as SEDL's Active Teaching modules. ESC-2 trained approximately 400 TIFTech team members and completed a videoconference network between the ESC and remote sites located in twelve Region 2 school districts. ESC-2 maintains the videoconference system infrastructure and facilitates use of videoconference system by districts, including resource sharing and scheduling. The number and variety of offerings in professional development continue to increase.

Administration and Support Services

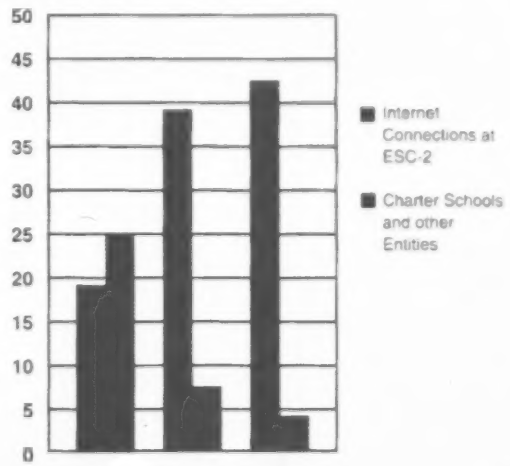
The interdependence and close relationship among MIS, data processing, and educational technology services provides districts with improved accuracy, increased speed, and reduced costs and effort.

- **Management Information Systems (MIS)** - This system provides Internet access,–e-mail, mainframe, and novaNET services to school districts, charter schools, private schools, libraries, Nueces county, and colleges. Services include technical support and troubleshooting over the phone, by e-mail, and on site.
- **Meetings** - Quarterly Technology Contact Meetings and Media/Technology Advisory Committee meetings determine the focus and direction for the region. Some meetings are held via videoconference.
- **Data Processing** - The ESC's data processing support provides direct information to users concerning laws governing student and business accounting procedures, including those for TEA's Public Education Information Management System (PEIMS). This support includes assistance for schools in acquiring reports from databases on student and business accounting.
- **Educational Technology** - Region 2 consultants serve as members of technology planning teams for school districts. Consultants provide support in selecting software and hardware, and help write and revise technology plans.

Infrastructure for Technology

The Coastal Bend Network, CoBeNet, is a sophisticated and complex wide-area network (WAN) developed by ESC-2. The network includes approximately 40 school districts, charter schools and private schools; Nueces County; Del Mar College; Texas A&M at Corpus Christi, and Joe Barnhart Bee County Library; the ESC works with both KEDT-TV and the Texas State Aquarium to deliver interactive instruction to school districts via CoBeNet. The network has been under development for several years with funding, in part, from two major technology grants.

CoBeNet features state-of the-art equipment for transmission of voice, data, and video. A new Cisco VoIP phone system has been installed on the local-area-network (LAN) with capabilities of future growth for the wide-area network (WAN). The average network traffic is currently seven to nine megabits per second. ESC-2's MIS staff of six maintains the network and provides technical support and troubleshooting. The MIS staff has continued to upgrade equipment for higher performance and is considering doubling its video capacity. In anticipation of the need for increased bandwidth, MIS upgraded its bandwidth from 10 MG to 15 MG burstable to 20 MG; and this traffic was rerouted across an OC-3 connection for improved performance.



Region 3 Education Service Center
Victoria, Texas • 361-573-0731 • www.esc3.net

Region 3 Education Service Center (ESC-3) serves the Crossroads of South Texas. It is centrally located between San Antonio, Corpus Christi, Houston and Austin. Most students in the Region 3 ESC service area attend class in small rural districts which have had size and location barriers to overcome in acquiring technology. Forty school districts in 11 Gulf Coast counties are located in Region 3. Victoria County, the only metropolitan area in the region, is the smallest metropolitan area in the state. The largest Region 3 district serves 14,400 students. Four districts have student populations in the range of 2,500 to 5,000. Seven districts serve students in Grades K-8 or fewer grades, with enrollments of less than 100 students. The majority of the districts have between 300 and 1,500 students in average daily attendance (ADA). Enrollment continues to decline in the region and currently totals 55,310 students.

The small size and rural locations of the communities, in addition to a lack of local resources, have served as barriers for students in accessing the expanded educational experiences available through technology. The economic background of these students is extremely varied, with eligibility for free and reduced lunch ranging from 12.8% to 100% across districts in the region.

Teaching and Learning

Region 3 Education Service Center:

- Targets staff development for teachers at infusion of technology in the classroom. The Technology Application TEKS are the framework for workshops and correlated to specific core content TEKS as well as Professional Development and Appraisal System (PDAS) requirements. In addition to ESC presented workshops, five districts incorporated the IntelTeach to the Future program into their local staff development plans with one of the districts in the region hosting the initial institute for MasterTeacher training. The ESC has participated in the implementation of this intensive program across the region.
- Facilitates evolving technology resources available via the Internet. The Region 3 ESC web site http://www.esc3.net is maintained by the Technology Component and promotes center-wide programs and services.
- Initiated a regional Multimedia Contest for K-12 student projects in the areas of Multimedia, Web Publishing, Desktop Publishing and Video. Students were given the opportunity to use multimedia tools in the curriculum in order to sharpen communication and critical thinking skills. Eight districts submitted 20 projects across all grade levels in the initial implementation year. The project is to be expanded to teacher projects in subsequent years.
- Developed a comprehensive Technology Application Teacher Certification Program that the State Board for Educator Certification (SBEC) approved for delivery beginning Fall, 2002. The goal is to increase the high school Technology Application courses offered in the region by providing a program creating a pool of certified teachers. Initial enrollment is fourteen teachers in Region 3.
- Models technology in the core content areas through collaborative workshops with the gifted and talented (G/T), social studies, reading, fine arts programs, and for the service learning grant program.
- Participates in the Texas Virtual School project to provide expanded courses to students in the region.

Educator Preparation and Development

Region 3 Education Service Center:

- Managed a $2.5 million collaborative TIE grant involving 21 districts and five private schools. One hundred forty teachers from 68 campuses participated directly in the grant. Curriculum and technology personnel collaborated across grade bands and academic areas, creating 26 distinct projects integrating technology in the Math TEKS, specifically addressing the algebraic concepts in Grades K-12.
- Maintained 100% membership in the Texas Library Connection (TLC) project at 40 districts and 17 private schools in the region. Usage continues to increase, according to the TLC usage statistics captured by TEA. Average searches in Region 3 totaled more than 20,000 per month by the spring semester of 2002.
- Expanded online resources available to districts to include Electric Library, Facts on File, Web-Ed and TeachStream.
- Provided TIF Tech Training as required for 20 districts receiving TIF grants during the period 2000-02. As of June 2002 all 40 districts in Region 3 had received TIF awards totaling $6.3 million during 2000-02. TIF grants have significantly reduced barriers to technology access in all districts in Region 3.

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Administration and Support Services

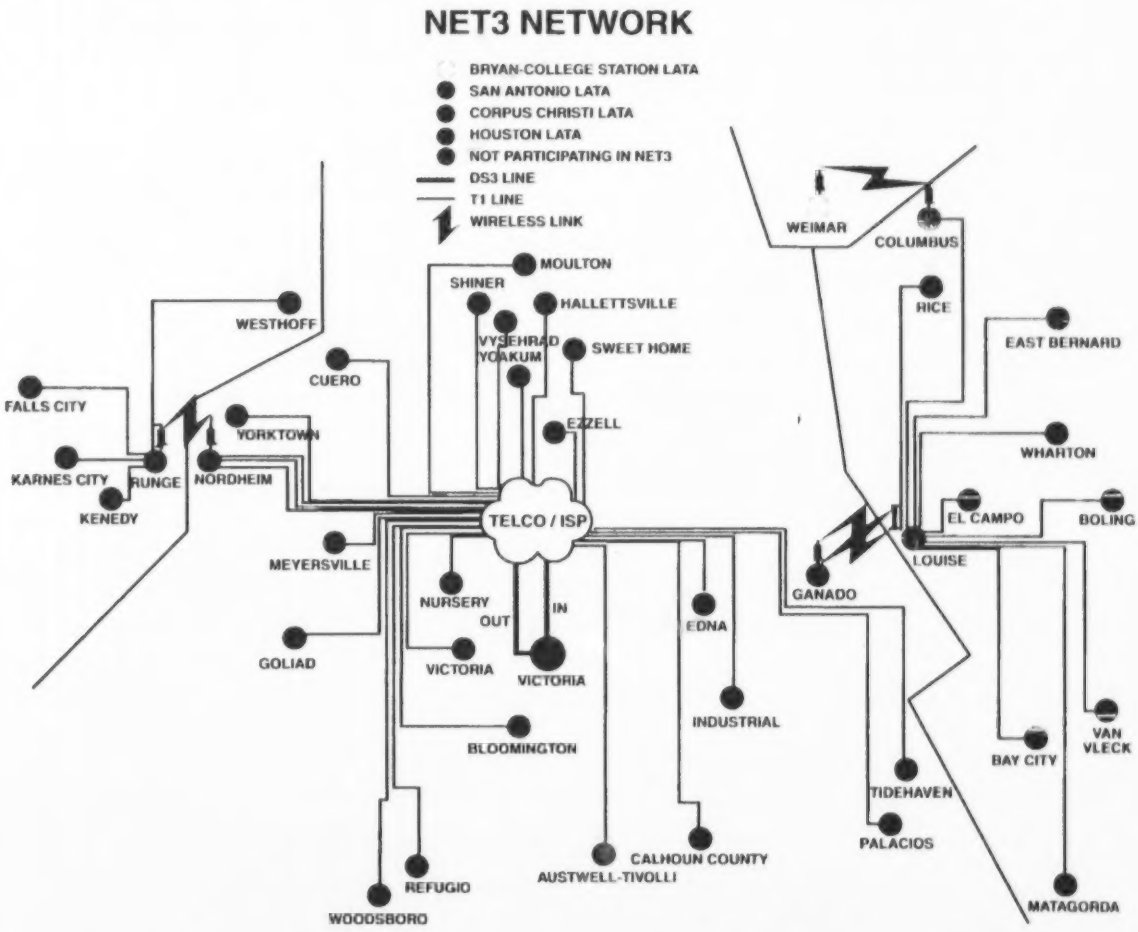
Region 3 Education Service Center:

- Assists districts in meeting requirements for technology funding opportunities, such as E-Rate, TIF and "No Child Left Behind". Thirty-three districts completed the online district *Texas STaR Chart* and began using the chart with campus and district teams in planning. Thirty-two districts have TEA-certified Technology Plans through at least June 2003.
- Develops, updates and enhances administrative technology tools, such as Region 3 Planning Software, Principals Appraisal, Professional Development Appraisal Software and Administrators Appraisal. These FileMaker Pro developments have been used across the state as well.
- Hosts a Management Information Systems (MIS) web site http://www.mis.esc3.net. Thirty-four districts participate in the MIS contracted services for software applications support.
- Serves as supporter and copresenter of the TASA Technology Leadership Academy. Twenty-eight districts have participated.

Infrastructure for Technology

Region 3 Education Service Center:

- Implemented a regionwide network, NET3 incorporating wireless technology
- Enabled thirty-five districts and two junior colleges to participate in video and/or data services provided by NET3.



Region 4 Education Service Center
Houston, Texas • 713-462-7708 • www.esc4.net

Region 4 Education Service Center (ESC-4) serves the largest student and professional population in the state. Region 4 ESC consists of 54 independent school districts and 52 approved charter schools in seven counties in the upper Texas Gulf Coast area. Region 4 ESC's educational community includes more than 903,257 students—almost one-fourth of the state's total student population—and 80,200 professional educators.

The school districts in Region 4 are as diverse as the landscape. From the sandy shores of Galveston Bay to the sprawling metropolis of Houston, districts range in size from a total enrollment of 117 students to more than 210,000 students, the largest in the state, seventh largest in the nation. Within Region 4, 47% of the school-aged children qualify as economically disadvantaged. TAAS student achievement scores continue to be above the state average.

Teaching and Learning

Region 4 Education Service Center:

- Delivers distance-learning programming for students to 124 campuses (representing 86,947 students) in 42 districts in the form of high school courses, enrichment programs, electronic field trips, and elementary-level instruction for students who are enrolled in English as a second language (ESL) instruction.
- Offers a training and support program to assist high school teachers as they continue implementing the Technology Applications curriculum.
- Provides a training program in support of state Technology Infrastructure Fund (TIF) grants. Teams attend 11 days of technology training designed to improve student use of technology in the classroom. 151 six-member campus teams from over 31 districts and charter schools participated in the training program from 2000-02.
- Maintains an instructional media library consisting of 11,529 videotape titles, 419 laserdiscs, 366 CD-ROMs, and 372 multimedia kits for loan to schools.
- Loans assistive technology equipment to districts and provides technology for students with visual impairments. Current inventory on loan to districts and students is valued at more than $2 million.
- Leads a regional collaborative that provides instructor training and classroom support to 18 high schools and two community colleges participating in the Cisco Networking Academy program. More than 700 students participated in this innovative four-semester career program during the 2000-02 school years.
- Coordinates a statewide pilot project to provide Internet classes for high school graduation credit through the Texas Virtual School. All courses offered are aligned to standards including the TEKS and are taught by Texas certified teachers.

Educator Preparation and Development

Region 4 Education Service Center:

- Provides training to teachers and administrators in instructional technology, assistive technology, and administrative applications. 1,036 training sessions were offered during the period 2000-02.
- Provides access to over 1,700 instructional software titles that can be explored on 30 work stations in the Technology Preview Center with the assistance of two full-time facilitators.
- Maintains three training labs and three mobile multimedia labs that can be moved to any conference room for professional development that integrates technology as well as training on how to use the technology.
- Maintains an Assistive Technology Resource Center with state-of-the-art hardware and software (valued at approximately $1 million) for training campus and district personnel in academic support, computer access, augmentative communication, and environmental access.
- Delivers distance-learning programming for teachers and administrators to 124 campuses (representing 32,851 educators) in 42 districts in the form of professional development workshops and information updates.
- Coordinates a twenty-region ESC/TEA network for providing statewide leadership to the other ESCs for training on assistive technology for students with disabilities.
- Provides ongoing training and support for statewide technology initiatives including T-STAR and the Texas Library Connection. T-STAR broadcasts are simulcast on the Region 4 Television Network and Region 4 Videoconferencing Network.

- Provides professional development for middle school mathematics teachers synchronous with student instruction using the regional videoconferencing network. By modeling instruction and providing new instructional strategies, teachers are targeting prealgebra objectives on the TAAS test.
- Provides professional development for high school mathematics teachers synchronous with student instruction using the regional videoconferencing network. By modeling instruction and providing new instructional strategies, teachers are targeting algebra objectives on the TAAS test.
- Provides professional development for elementary school ESL teachers synchronous with student instruction using the regional videoconferencing network. By modeling instruction and providing new instructional strategies, teachers are targeting objectives on the TAAS test.
- Offers a Campus Technologist Certification program designed to prepare educators for the role of campus technologist. The main focus of the program is to provide these teachers with the tools to assist their peers with integrating technology into their classroom.
- Provides certification training for distance education teachers with specializations in Internet and videoconferencing-based instruction. One hundred thirteen educators have received certifications through these programs during 2000-02.
- Offers an alternative certification program for currently certified teachers seeking an additional certification for the Technology Applications endorsement. This SBEC-approved program enrolled 137 teachers during the 2001-02 school year, the first year the program was available.

Administration and Support Services

Region 4 Education Service Center:

- Provides the Texas Cooperative Purchasing Network to assist in purchasing technology equipment. Eleven ESCs and 560 school districts statewide have purchased more than $180 million in technology from September 2000 to July 2002.
- Facilitates the Technology Leadership Group, representing each of the 54 districts, that meets quarterly to share information and give leadership throughout the Region 4 service area.
- Facilitates the Videoconferencing Committee, represented by superintendents with districts connected to the Distance Education Network.
- Facilitates ongoing superintendent's technology workshops by bringing in national technology leaders including Ian Jukes.
- Sponsors workshops presented by TEA personnel on Data Standards, PEIMS, and Accounting.
- Assists districts with data disaggregation and interpretation of data.
- Develops administrative tools for managing resources (facilities, staff, time and effort, scheduling, etc.) based on the latest programming languages and database techniques including Microsoft .NET, XML, Visual Basic, and SQL.
- Develops Web-based applications using state-of-the-art languages like .NET and ASP, and encryption methods to provide interactive and secure database-driven systems for real-time customer services including online registration, credit card payment, continuing education unit (CEU) management, lesson plans, and an electronic document portal.

Infrastructure for Technology

Region 4 Education Service Center:

- Provides Internet access to districts and campuses through ESC4.Net to 36 districts, individual campuses, charter schools, and private schools.
- Provides Internet filtering for ESC4.NET districts. The filtering service is customizable to meet the individual needs of each district.
- Offers router maintenance, spare equipment and technical assistance to ESC4.Net districts.
- Maintains expertise to assist schools and districts in network management, network design, Internet connectivity, and hardware and software support.
- Maintains eRegistration to allow customers to register for professional development electronically via the Web.
- Operates a 73-port regional videoconferencing network hub through which student and educator content is exchanged. Nineteen districts representing 42 campuses are members of the Region 4 Videoconferencing Network.

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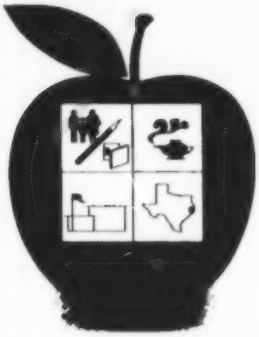

Strength through Cooperation

Region 5 Education Service Center
Beaumont, Texas • 409-838-5555 • www.esc5.net

Region 5 Education Service Center (ESC-5) serves 171 public school and five charter school campuses in the southeast Texas area, which is composed of Hardin, Jasper, Jefferson, Newton, Orange, Tyler and a portion of Galveston counties. These counties are predominantly rural areas with few high-wage employment opportunities. The employment situation accounts for 46.3% of our students being classified as economically disadvantaged. Students in the area fall into two major cultural groups: 59% white and 31% black, with a small Hispanic population (7.4%) and an even smaller Asian population comprising the balance of the region's approximately 86,000 students. Region 5 boasts an attendance rate of approximately 95.3%, and is pleased that our dropout rate has decreased to 1.0% from 1.3% in 1999. The 14% teacher turnover rate and the shortage of certified teachers in the areas of advanced science, mathematics and technology-related courses are particular concerns.

Teaching and Learning

Region 5 ESC operates a state-of-the-art Technology Training and Preview Center that includes two multi-platform training classrooms. Including an increase in the number of high school technology courses offered, video production courses have increased from one in 1999 to five in 2000. Monthly Video User Group meetings via distance-learning allow teachers and students to share ideas, ask questions and receive minilessons on producing great video. Consultants are currently working on a curriculum targeting this course that will be made available to high schools in the region. In addition, lesson plans developed by regional teachers, and targeting the Technology Applications TEKS, will be published on the web site as an added resource this fall.

Region 5 ESC also operates an assistive technology laboratory that offers demonstration, preview, training and support for educators of students with special needs. The lab strives to match student needs with the appropriate assistive technology device in the most cost-efficient manner.

Educator Preparation and Development

Through a variety of delivery methods, Region 5 ESC has developed a cadre of district technology support staffs who serve as campus resources and help local instructors integrate the use of technology into the curriculum. The ESC implemented a series of 20 independent video study courses, and use of these resources has doubled over the past year. One teacher commented, "Thank you! Thank you! Finally, I've found a way to get staff development that matches my needs and busy schedule!" In addition, twelve online courses are offered in the area of technology integration in a variety of disciplines. In tandem with the state's new T-STAR CPE Online opportunities, Region 5 has amassed a library of T-STAR broadcasts and makes these available to educators who wish to view them and take the online assessment for CPE credit.

The center's annual Back-To-School Technology Conference focuses on technology integration and allows participants to attend sessions via traditional face-to-face methods and remotely throughout the region via distance learning. Community members are also encouraged to attend, so parents are able to view the technology that their children are exposed to on a daily basis.

Regularly scheduled user support group meetings via the SETTEN Distance Learning Network offer follow-up and review sessions, which enhance the capabilities of these local resources. The system reduces travel costs and time for participants and eliminates the need for a classroom substitute. One particular success for this initiative occurred in the fall of 2001, when Region 5 ESC offered 10 hours of substitute teacher training to 37 participants throughout the region. One substitute summarized the positive experience for all: "The STEP-IN training was great. I would love to see more courses for subs offered this way. I didn't even have to travel to Beaumont to receive it!"

Administrative and Support Services

Monthly satellite technology user group meetings offer the opportunity and time for training and the sharing of ideas and strategies. The SouthEast Texas Telecommunications Education Network (SETTEN) is used to rebroadcast T-STAR programs at districts' request and is the medium of delivery for the monthly user support group meetings.

The Technology Assistance project also helps districts update their technology plans, secure grant funding from a variety of sources and apply for E-Rate discounts for telecommunications services. In addition, training enables technical support staff to obtain the skills needed to maintain hardware and networks in their local districts.

Infrastructure for Technology

SETTEN provides over 7,000 educators with e-mail, Internet access and videoconferencing. ESC-5 continues to support a hardware-purchasing cooperative and provides a collaborative E-Rate application for all schools connected to the network. The ESC provides sustained support that includes instructional and administrative training, network monitoring for efficient use of resources, as well as comprehensive event scheduling. More than 175 students and educators received college course credit for courses offered in 2001-02, and enrollment for interactive courses has nearly tripled since its inception in 1998.

With the implementation of the Commissioner's Access Initiative, grant funding and continued funding from the state, more training will be delivered to our districts in nontraditional ways such as videoconferencing and Web-based staff development. Districts will continue to operate more efficiently and effectively by sharing teachers; their students will continue to gain credit for high school and college courses that were not available previously; and educators will have access to training opportunities that are timely and relevant. With expansion of our wide area network, more data from TEA will be accessible by more people so that more effective decisions can be made regarding needs of teachers and students. With access to this wealth of data and tools, teachers will be better prepared and all students will have a greater opportunity to achieve.

SouthEast Texas Telecommunications Education Network

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Region 6 Education Service Center
Huntsville, Texas • 936-435-2100 • www.esc6.net

Region 6 Education Service Center (ESC-6) is located in beautiful southeast Texas in the piney woods, 60 miles north of Houston. Region 6 encompasses 12,400 square miles that includes 15 counties, 60 school districts, and various private schools serving over 131,000 students and over 18,000 teachers and staff. The region is rural, richly multiethnic, and reflects the trend of growing diversity that is common in much of the state. Sixty-four percent of the districts are special needs districts. More than 40% of the students are eligible for free and reduced-rate lunches. Nevertheless, the districts in Region 6 are consistently increasing the achievement levels of their students as measured by the TAAS tests. A varied economy includes agriculture, petroleum, energy, forest, manufactured products, universities (Sam Houston State and Texas A&M Universities) and the state prison system. Recreation and tourism are important in the region which includes the Sam Houston and Davy Crockett National Forests, part of the Big Thicket National Preserve, Lake Livingston, and several other area lakes.

Teaching and Learning

Region 6 assesses the needs of its students and staff annually and offers a wide variety of services to support the efforts of its districts to improve student performance. The catalog of services includes support for each state technology initiative and for additional needs expressed by regional district personnel. Services in the area of teaching and learning are designed to provide support and training in such a way as to empower districts to implement and integrate technology resources. Project Integrate training, which are three rounds of two-day workshops, give teachers confidence and skill in student-centered, technology-rich learning experiences. Sessions focus on project-based learning, Internet tools, and multimedia integration into the learning process. In addition, Region 6 science teachers work with NASA via distance learning.

Region VI Science Teachers Work With NASA via Distance Learning

CommNet, a seven-phase process of Internet access and distance-learning capability, has been in progress for more than six years. The current status of these goals is:

Completed

- Regional data network established with Internet and e-mail.
- Regional video network established for distance learning and videoconferencing.
- Regional video network expanded to include ISDN dial-out capabilities.
- Regional network migration: IP to ATM.
- Statewide video network using TETN as model.

In Progress

- Desktop videoconferencing and voiceover IP with toll free regional dialing.
- Video Stream to schools on demand.

Yet To Come

- Wireless, Broadband Access, etc.

Instruction is enhanced for 36 school districts that get their Internet access through Region 6. The CommNet Internet access consortium allows each of the participating districts to obtain cost-effective, reliable access to the Internet. In the summer and fall of 2001, this wide area network was upgraded to the higher capacity ATM capability.

Distance-learning capability is provided to 27 Region 6 school districts, one community college, one university, and TETN at TEA. This capability has enabled students in these districts to have the opportunity to participate in concurrent enrollment classes with Blinn College and Angelina College. Share-a-Course collaboratives allow school districts to overcome personnel shortages to meet the needs of their students. During the 2001-02 school year, 601 sessions were held using the distance-learning capabilities. Activities such as staff development, regional meetings, study groups, forums, school board training, and electronic field trips have also taken place.

An up-to-date Preview Center is maintained on-site at Region 6 to provide the facilities for training and for the evaluation of hardware, software, and other technologies. The Preview Center includes three labs, a software preview area, and a distance-learning center.

Educator Preparation and Development

Professional development programs for educators address a variety of technology needs through various delivery models. Regional workshops, Train the Trainer workshops, project-based program support (GLOBE), technology integration training (Project Integrate), and grant-required training (TIFTech) have assisted hundreds of educators to gain skills. These programs encompass the Internet, multimedia, and other resources, integration of technological resources into the curriculum, and development of technical skills to support those resources. The programs reach teachers, technology staff, librarians, administrators and policy/decision makers. Technical training, such as A+, Microsoft Administration, and Cisco training, continues to be offered by technically certified ESC staff. New training is developed as needed.

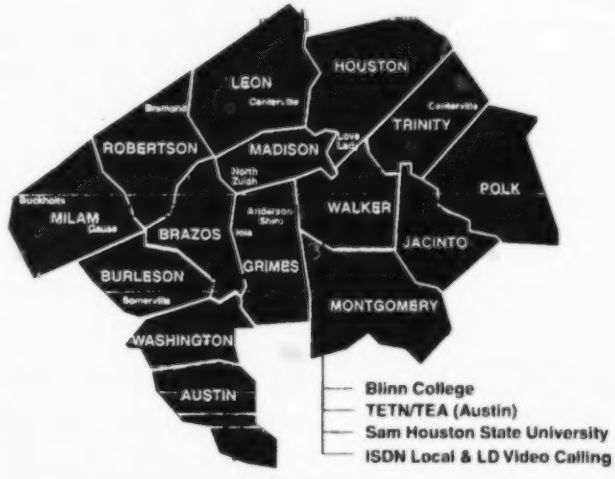
Administration and Support Services

Region 6 ESC takes our motto, "service is our middle name", seriously. The support that is offered includes: information dissemination; conferences; on-site consulting and training; assistance with bidding and purchase cooperatives; administrative software and services; and other cost-effective services. Many of these services would not be readily available to schools in rural areas otherwise. PEIMS services are offered to schools as well. Both student and administrative software is used to perform administrative and support services. Training for business managers, data processing staff, and administrators is provided.

The 21st Century Learning Institute (formerly the Technology Conference) is held yearly. This conference, drawing over 400 educators annually from all counties in the region, brings opportunities to learn new and emerging technologies and new educational and administrative practices. To support these services, Region 6 maintains on staff a technology integration specialist, a library integration specialist, and a distance-learning specialist. Additionally, all instructional specialists participate in both Project Integrate training and in distance-learning delivery opportunities. Systems engineers, networking specialists and technicians hold MCSE, MCT, fiber installation, Macintosh repair, A+, CCNA, Cisco and CNA certifications. Additional staff, with expertise in a variety of areas, completes the technology support staff of Region 6.

Infrastructure for Technology

Each year the number of districts with a communications infrastructure has increased. CommNet, the regional network in Region 6, includes more districts each year that are directly connected for Internet access, e-mail services, and distance learning. Region 6 staff provide design, installation and configuration, cooperative purchasing, maintenance, and training to support technology and connectivity at the campus, district, and regional levels. ESC-6 is a resource for districts seeking infrastructure enhancement via TIF grants, TIE grants, and E-Rate.



Education Service Center, Region VI
Regional Network and Distance Learning Sites

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Region 7 Education Service Center
Kilgore, Texas • 903-988-6700 • www.esc7.net

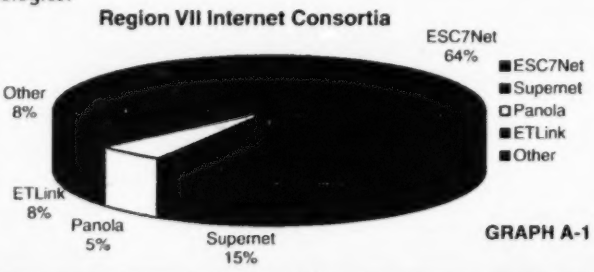
Region 7 Education Service Center (ESC-7) is located in Kilgore, Texas—best known as the "Capital of the East Texas Oilfield." Services at Region 7 are provided to 96 districts in 17 counties. The diverse economy of the region includes oil and gas, farming, ranching, manufacturing, education, medicine and health care. Historically, the region is recognized for wood products, gas and oil production, roses, sweet potatoes, tomatoes, onions, azaleas and dogwoods. Some are surprised to learn that many businesses located in Kilgore are internationally recognized for their world-class products and services in the manufacturing and telecommunication industries.

The region's 96 school districts and 7 charter schools, comprised of 68 rural and 28 urban districts, include 157,696 students and 22,666 teachers and staff. Forty-six percent of the students are economically disadvantaged. Student achievement results continue to improve with the percentage of students passing the TAAS in spring 2001 exceeding the state average in all areas, except the African American and Hispanic populations, which trailed behind by a few percentage points.

The region's telecommunications infrastructure includes four Local Access and Transport Areas (LATAs) and eleven local telephone companies. Equitable access to educational resources on the Internet is provided by funding from the Telecommunications Infrastructure Fund Board (TIFB), Technology Integration in Education (TIE) grants, and the E-Rate program. All school districts in Region 7 have received at least one TIFB grant and are directly connected to the Internet. There is at least one computer in the majority of the classrooms. (see graph A-1)

Region 7 ESC provides an array of the technology training and support services to implement the *Long-Range Plan for Technology, 1996-2010* through regional and local technologies.

Money invested into technology programs by Region 7 schools has had a tremendous impact on technology. In providing training for teachers and administrators for technology integration into the curriculum, Region 7 assists teachers and administrators in meeting Technology Application TEKS proficiencies. The following lists contain examples of activities available through ESC-7.



GRAPH A-1

Teaching and Learning

Region 7 ESC:

- Distributes information and training related to the integration of technology into districts' improvement plans, best practices for technology planning, and use of technology in teaching and learning through workshops, advisory meetings and planning meetings.
- Promotes technology events and conferences through newsletters, e-mail, and the Region 7 web site.
- Participates in partnerships to develop instructional materials and services such as TEKStar, the Principal's Leadership Academy, IntelTeach to the Future grants with various schools, TCTP training for business professionals becoming classroom teachers.
- Provides facilitated preview of learning resources, access to the Preview Center and labs for training related to software, textbook adoptions, and state technology initiatives, including the Texas Library Connection. A special education training lab is equipped with many assistive technology devices and offers a software library.
- Assists schools in developing and implementing strategies to meet the performance descriptions in the TEKS through computer-based model lessons and activities designed around TEKS for Leaders.
- Conducts 428 workshops to train over 6000 teachers, administrators, and technology directors/coordinators in technology usage in 2000-02.
- Contracts with over 65 TIF-awarded districts/campuses to provide TIF Tech Training to 408 administrators, teachers, staff/support personnel.
- Conducts distance-learning training for all staff to effectively use the equipment and instruction methods for distance learning.
- Conducts dual credit courses for high school students in collaboration with Panola College and Tyler Junior College.
- Educates teachers with new techniques for integrating technology, instead of "how to use" technology.
- Facilitates the completion of the District *Texas STaR Chart* to improve awareness of the district's technology implementation.

With video conferencing classes, our students have had the opportunity to compete 7 dual credit classes through Tyler Junior College and Panola College.

Jason Duplichain, Alto High School Principal

Educator Preparation and Development

Region 7 ESC:

- Establishes and maintains partnerships with software and hardware vendors, colleges and other education service centers to provide support for local technology initiatives.
- Offers professional development related to technology integration into TEKS, teaching and learning, instructional management, professional development and administration.
- Provides professional development via distance learning, distributed learning web site resources, and on-site staff development.
- Identifies web sites suitable for student research and data-gathering that can be found in various locations at http://www.esc7.net.
- Conducts staff development for local personnel responsible for technical support including Novell, Windows NT, troubleshooting PC and Windows machines, A+ and N+ training, PC Academy and Cisco Networking Academy.
- Provides leadership in 16 local Cisco Networking Academies.
- Offers Alternative Teacher Certifications through the TPCP program.
- Assists 94 schools in maintaining and updating TLC memberships.

Administration Support Services

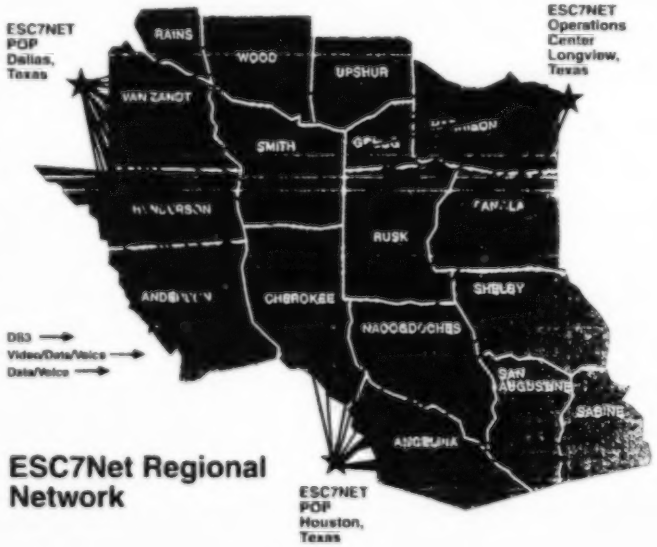
Region 7 ESC:

- Assists schools and districts with data desegregation and effective district and school improvement planning.
- Distributes the TEA PEIMS Edit and Reports Plus programs to districts, processes the PEIMS data submitted by districts and forwards it to TEA. The ESC produces the reports from PEIMS Edit and Reports Plus for districts to improve data accuracy.
- Sponsors workshops presented by TEA personnel on the Attendance Accounting Handbook and PEIMS.
- Conducts training programs on the use of technology resources in all aspects of school operations, including planning and operating WINSchool and RSCCC over local area networks, integrating classroom grade book and attendance modules for teacher's classroom use, using the TEA web site for accounting and using TEA's Data Central.
- Facilitates training for administrators on TEKStar, Internet use and management.
- Provides technical assistance and support to ESC7Net districts on distance-learning resources and training.
- Provides accurate and timely access to awarded bid categories for educational entity members who use the Internet.
- Facilitates training for TASA in the Technology Leadership Academy for Superintendents and Principals.
- Conducts ILD (Instructional Leadership Development) professional development for approximately 3500 administrators and teachers.
- Implements online registration for participants to register for workshops.
- Provides online resources for posting and/or searching job vacancies in K-12 education.

Infrastructure for Technology

Region 7 ESC:

- Maintains the telecommunication infrastructure for the regional network, ESC7Net for 61 Region 7 ESC school districts, colleges, charter schools, and private schools; using an ATM backbone for data, voice, and video services.
- Provides assistance to schools and districts in technology planning, network management, network design, technology integration, Internet connectivity, distance learning, videoconferencing, hardware and software support.
- Provides forums for regional collaboration through advisory committees, grant writing, and planning meetings.
- Provides virus scanning and protection for over 1200 e-mail accounts on the ESC7Net WAN.



ESC7Net Regional Network

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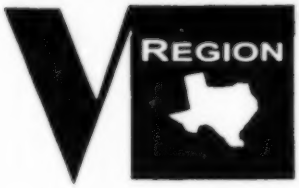


Region 8 Education Service Center
Mt. Pleasant, Texas • 903-572-8551 • www.reg8.net

Teaching and Learning

We are seeing a dramatic shift from awareness of technology and basic technology skills to expanded integration of technology across the curriculum. Hundreds of teachers are now using technology tools such as class surveys, online testing, Texas Library Connection (TLC) resources, and web sites to post class assignments and access instructional resources. Teachers and students now have access to multimedia curriculum content delivered directly to the desktop via the Internet either at school or home through a project called Digital Curriculum.

From 1999 through 2001 ESC-8 collaborated with Fabins ISD in far west Texas to deliver a Technology Integration in Education (TIE) grant called eeZone. It provided teachers and students opportunities to explore rich, interdisciplinary Internet projects that promoted critical thinking skills and confidence in the use of technology. The most popular unit developed was map-reading skills and uses of Global Information System (GIS) and remote sensing. This grant served 94 teachers and hundreds of students.

During the period 1999-2000, Region 8 ESC wrote a Texas Reading Academies grant that provided $425,000 to 12 small school districts to improve reading. The grant provided library books, computer software, extended library hours, summer reading academies for struggling readers, a summer reading program, a parent resource center, training for reading intervention specialists and one parent assistant to be trained for each school.

> ***Education is not preparation for life; education is life itself.***
>
> John Dewey

Educator Preparation and Development

Staff development addressed Texas Essential Knowledge and Skills (TEKS) in Language Arts, Math, Science, Social Studies, and Technology Applications TEKS. Additionally, we have begun training in vertical alignment of technology curriculum and have our four largest districts doing so.

Ninety percent of the administrators have received training regarding the Technology Application TEKS, which were addressed at both Curriculum and Technology Coordinators meetings. We also provide a segment on integrating technology at our New Teacher Institute.

This year, we extended our support for District Technology planning to include a two-day institute with online learning and support to help districts become more closely aligned with the *Long-Range Plan for Technology, 1996-2010.* Also, the new *Texas STaR Chart* has become an integral part of the support we provide districts.

ESC-8 has helped plan and support two environmental technology conferences, and helped initiate an area Texas Computer Education Association (TCEA) conference and continues to hold the area TCEA Programming Contest. The environmental technology conference focused on supporting specific needs of social studies and science teachers, while the TCEA conference supported all teachers in integrating technology and using distance learning.

More than 540 people were trained in using Texas Library Connection. Twenty-six sessions included TLC administration, TLC databases, TLC Marc Magician, and Library Updates.

Forty-seven districts and one private school (96%) are TLC members. Only one school district is not a member, and it will be joining in fall 2002. Also in fall 2002 our TLC focus will change from a library implementation model to a classroom and home access model. We all agree TLC has an enormous impact on the lives of educators and students. Mary Snell, librarian for Fannindel ISD, states, "We have three teacher's aides who are taking classes to obtain their teaching degrees. They are frequent users of the TLC resources. It saves them time by enabling them to find articles from our campus or from home instead of having to go to the college library."

> ***I am currently working on my principal's certification. TLC has been a tremendous asset in the research I have had to do.***
>
> Carla Sharp, Librarian, Redwater ISD

Administration and Support Services

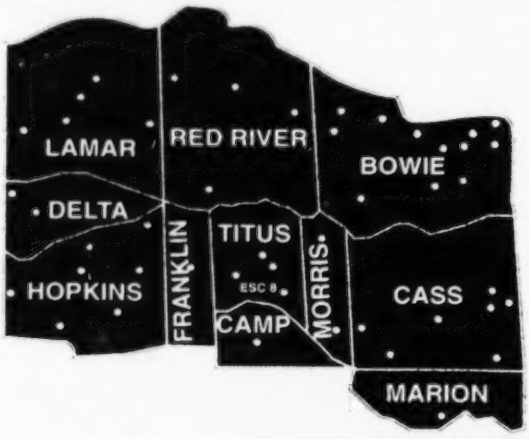
The ESC's Data Processing and Education Technology departments provide a wide range of services for administrative support, including network and electronic grade book support. We provide extensive assistance to districts in hardware selection and purchasing. Additionally, we have developed purchasing arrangements with hardware and software vendors to save districts time and money. Our Education Technology and Instruction departments work with partners to provide all districts computer software and training necessary to analyze TAAS data. This year our Data Processing department received a TIE grant to provide all district offices with new computers and printers. Administrators and support staff received extensive training in the use of productivity software and the use of TEA Internet planning resources. Over 80 administrators received personal digital assistants (PDAs), along with training in operation and applications for school management. For four years, Region 8 has been developing formative assessments of academic skills (FAAS) to measure how students are learning and to assess the impact of instructional practices. These assessments are formatted like the Texas Assessment of Knowledge and Skills (TAKS) and will be delivered via the Web. Students will take TAKS assessments online, and teachers will have immediate feedback. Also online this summer will be a campus/district plan template that includes all required items.

Infrastructure for Technology

In March of 1997 the Northeast Texas Regional Education Telecommunications Network (NTRETN) was formed as an outgrowth of regional technology planning. Currently, NTRETN serves 47 districts and 122 campuses. Initial capitalization for equipment was provided by TIF and TIE grants. However, the network is now self-sufficient. NTRETN provides essential equipment and personnel to maintain delivery of Internet, e-mail, district Web hosting, and videoconferencing. The network is currently being upgraded to provide better Internet access, security, and Web filtering services. NTRETN's videoconferencing system delivers direct student instruction, staff development, and interdistrict collaboration. High school courses which have been delivered are Spanish I, II, and III; Physics; Concurrent English; Algebra; Calculus; and Computer Science. Recently, NTRETN entered into an agreement with NET.net, a consortium of 10 hospitals and 15 colleges and universities throughout northeast and east Texas, to interconnect the two networks. This new connection will provide rural communities expanded staff development, a greater variety of student resources, and higher education opportunities for students, teachers, and community members. This agreement will also provide rural health care professionals access to cost effective professional development. In addition to videoconferencing, we are implementing an Internet-based system for the delivery of staff development, mentoring, and support.

Region 8 ESC serves 11 counties located in the northeast corner of Texas. All but a handful of the 48 districts served by Region 8 are located in small, rural farming communities with 75% of the districts with student populations of less than 2,000. In fact, the total student population for the region is approximately 52,000. 49% of the students are considered economically disadvantaged. However, based on 1999-2000 data, Region 8 had both the highest average attendance and the lowest dropout rate for the state. Region 8 districts have one of the lowest total operating expenditures per student and yet TAAS scores rank among the highest in the state. Also, there are no low-performing campuses within the region. While Region 8 teacher salaries are some of the lowest, on average, Region 8 enjoys one of the lowest teacher turnover rates in Texas and one of the highest percentages of teachers with advanced degrees. Technology is an integral part of the school district's operations. In summary, schools in Region 8 are a picture of stability and achievement. Every dollar is stretched for its maximum value and education technology is highly valued.

Regional Network Sites



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REGION 9 EDUCATION SERVICE CENTER WICHITA FALLS TEXAS

Region 9 Education Service Center
Wichita Falls, Texas • 940-322-6928 • www.esc9.net

Region 9 Education Service Center (ESC-9) serves 40 public school districts and one charter school in 12 counties with a student population of more than 40,000. The ESC-9 service area encompasses 10,417 square miles of north central Texas, including urban and rural districts with diverse student populations. Approximately 43% of the students served in this area are identified as economically disadvantaged. Thirty campuses (25%) served by ESC-9 were awarded exemplary status for the 2001-02 school year. The Region 9 ESC is committed to serving the educational needs of its communities. The Technology Department of ESC-9 is also committed to providing school districts within its service area with educational technology services that will improve student performance by enhancing efficiency, effectiveness and performance of students, teachers and administrators.

Teaching and Learning

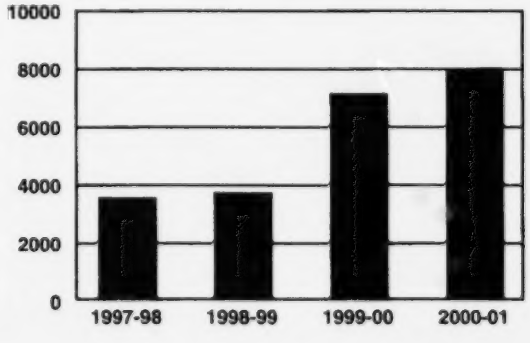
The Region 9 Technology Department considers planning to be an integral part of assisting school districts in the teaching and learning process. Efforts to provide leadership to districts for long-range technology planning include yearly seminars focused on the development of campus and district technology plans that meet TIF, E-Rate and state requirements. In addition to training in the planning process, Region 9 provides grant development workshops. The Region 9 Technology Department provides training opportunities including those in technical skills and in technology integration across the curriculum. Region 9 ESC also offers training for TEKS and TEKstar in curriculum areas.

Continued technical assistance for using T-STAR satellite-delivered distance-learning opportunities is provided to all schools in the region. Through partnerships with local colleges, 225 students in ESC-9 districts received concurrent enrollment credit during the 2001-02 school year. Using the existing videoconferencing network and shared expertise among staff members in critical teaching areas 202 students enrolled in interdistrict, distance-learning classes during the 2001-02 school year.

Educator Preparation and Development

Professional development is another focus of the ESC-9 Technology Department. Its technology training labs are used extensively for planning, developing technical skills and enhancing integration of curriculum and technology. In addition to conducting regularly scheduled workshops, technology specialists travel to districts to provide custom-developed, on-site training and technical assistance. Also, this department, in conjunction with the local chapter of TCEA, provides an annual Technology/Media Conference. This event showcases emerging technologies and provides opportunities for sharing effective methods of use. Our distance-learning network is now being used to offer professional development in various subject areas to Region 9 district personnel. These sessions have included academic planning meetings, technology training, school board training, special education training, and follow-up training sessions.

As the chart below indicates, the demand for technology-related training sessions continues to increase. Enrollment records show that 4,831 educators in Region 9 were trained between September 1, 2001 and May 31, 2002. Since the majority of the training takes place during the summer when staff is available to attend, we project a total enrollment of 8,500 staff members for the 2001-02 year.



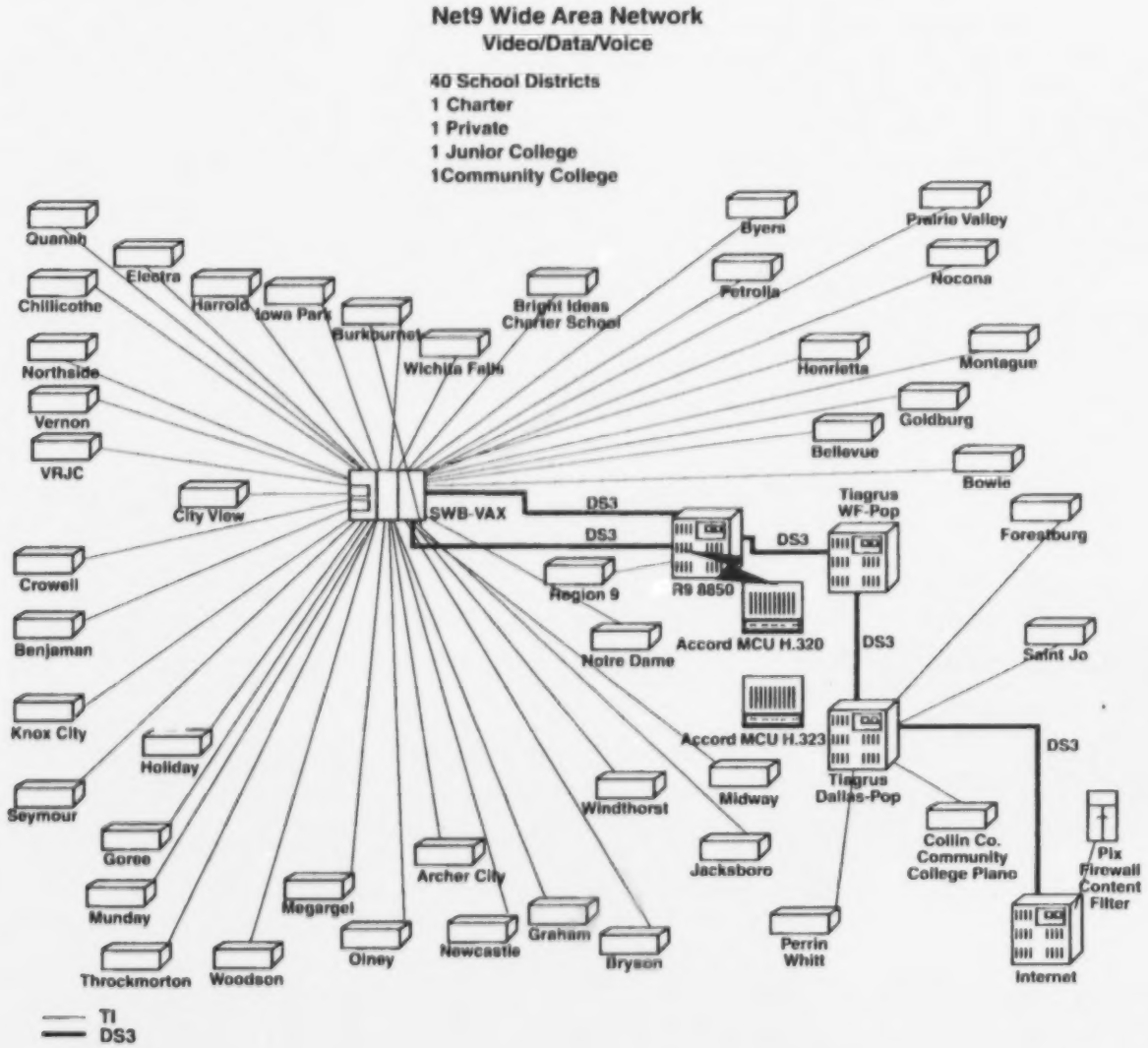
Administration and Support Services

Region 9 offers training and on-site assistance to school district personnel for PEIMS reporting requirements and resubmission of PEIMS data. Training is also provided for AEIS-IT, a software product that enables users to disaggregate TAAS data according to selected performance and/or demographic criteria. FEISTIER training equips district personnel with an additional tool for comparing their schools with similar schools in the state on PEIMS-submitted data items.

Region 9 provides workshops and technical assistance for librarians through the Texas Library Connection. It also maintains an up-to-date Technology Preview Center with facilities for training and for evaluating hardware, software and other technologies. In addition, administrators across the region receive training on Professional Development and Appraisal System (PDAS) software to enhance their appraisal efficiency.

Infrastructure for Technology

The Net9 project commenced on January 16, 1998 as a connectivity solution designed to provide an affordable method of Internet access for school districts in Region 9. To date, the Net9 Project has connected 41 districts, Notre Dame Private School, ESC-9, and two community colleges to provide Internet access and a distance-learning network. Presently, 42 school districts and Region 9 ESC have videoconferencing capabilities. Future plans include additional college and university connections. These connections will allow ESC-9 to broaden the range of curriculum offerings available to area students and to begin offering postsecondary courses for adults across the region.



Region 10 Education Service Center
Richardson, Texas • 972-348-1700 • www.ednet10.net

The Region 10 Education Service Center (ESC-10) serves 81 public school districts and 31 charter schools in 8 counties. Our region has 597,160 students with 43% of those students identified as economically disadvantaged. Our diverse student population is 21% African-American, 30% Hispanic, 44% Anglo, and 5% in the Other category. Our school districts' composition is equally diverse, ranging from a district of 129 students with one campus to a district of 160,477 students with 223 campuses. Region 10 is a unique combination of urban and rural districts.

Teaching and Learning

- The Region 10 Technical Academy provides students and cooperating teachers with the framework to complete A+ and N+ certification. Both certifications are recognized in the technology industry. Knowledge and skills learned in the Technical Academy allow students to serve as resources to their own districts as well as to establish their career paths.
- Students in schools throughout ESC-10 are learning Spanish through the *Espanol Para Ti* program offered by the Regional Instructional Television Consortium (RITC). RITC also broadcasts live, interactive electronic field trips that take students to a variety of locations where they interact in real time with experts from many fields.
- ESC-10 collaborates with community colleges to provide dual credit and advanced academic coursework to high school students via the EdNet10 videoconference network. During the 2001-02 school year 391 secondary students participated in videoconference courses such as Honors Geometry, AP Statistics, Fundamentals of Criminal Law, and Human Growth and Development.
- Student core coursework was provided to participating districts via partnerships with the Texas Virtual School and NovaNet as well as online technology courses such as JAVA, C++, and Visual Basic through partnerships with ComputerPrep and Learning Lynx.

Educator Preparation and Development

- The Technology Specialist Institute (TSI) is a two-year program that incorporates over 10 days of training to enable teams of teachers to return to their campuses and model technology integration. The focus of the TSI Institute is on content integration and technology applications. Participants are divided into groups to focus on elementary, secondary or technical support needs. While the majority of TSI is provided in a face-to-face format, online modules have been developed to augment instruction.

> ***The TSI Year 1 day that was the least "fun"—but the most important—was the time spent looking at copyright issues. I can make statements to students and other teachers (about copyright) with certainty now.***
>
> Wendy Wise, Greenwood Hills, Richardson ISD

- The one day in the TSI Year that was the least fun—but the most important—was the time spent looking at copyright issues. I can make statements to students and other teachers (about copyright) with certainty now. [Wendy Wise, Greenwood Hills, Richardson ISD]
- TEKStar helps teachers design lesson plans and correlate activities with instructional strategies such as learning styles, critical thinking skills and multiple intelligences. Because TEKStar is correlated to the TEKS and therefore linked to the TAKS, the current access base has rapidly expanded to over 73,000 users. Effective August 2002, TEKStar will make the transition to a web-accessed format entitled iTEKStar.

> ***I learned considerations for designing an online course and how to create a course with Blackboard. I plan to offer an online course extension for my gifted and talented students.***
>
> Julie Holland, Cedar Hill High School

- Through the use of Blackboard courseware, Region 10 ESC is developing online professional development to augment face-to-face workshops. Online course development and hosting for districts is being piloted in selected districts.
- Region 10 collaborates with two universities to provide librarian and principalship certification cohorts via videoconferencing. In the last two years over 200 educators from 42 districts have participated in cohorts.

- Region 10 has provided TIFTech Training for 1,875 teachers and administrators in 70 districts since the year 2000.
- The Region 10 Library Service department has provided on-site training, individual training at the campus, listserv tips and updates, and training on how to use Texas Library Connection with the TEKS and TAAS. Sessions are provided on the use of the new GALE and updated Britannica.

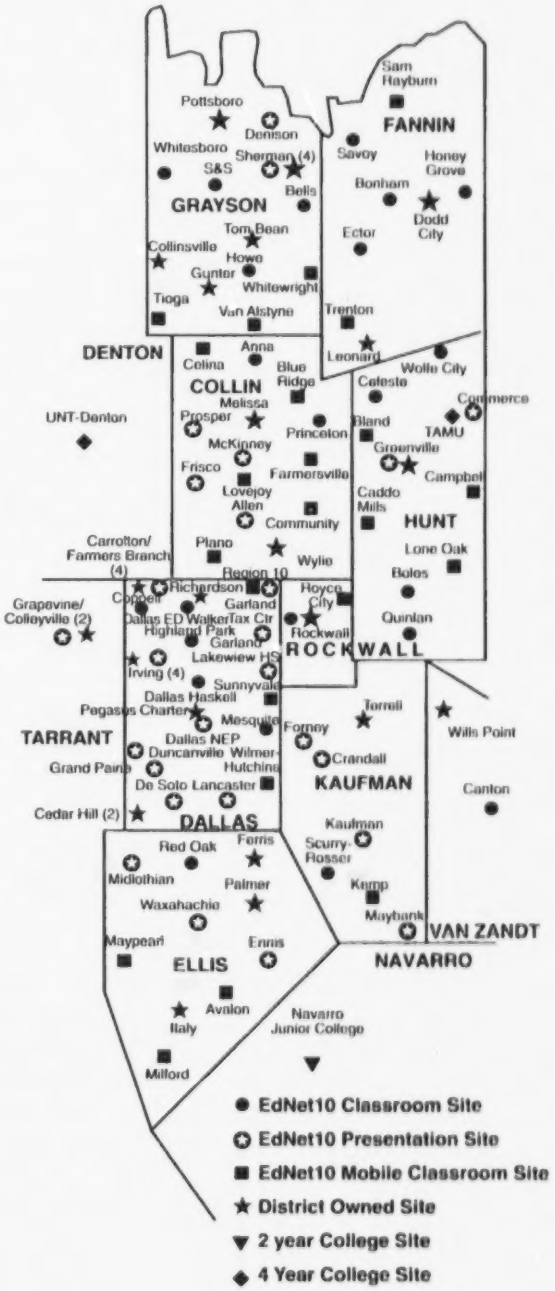
> ***"I thought I had everything I needed to teach journalism but GALE is fantastic to demonstrate styles of professional writing..."***
>
> Journalism Teacher, Leonard ISD

Administrative and Support Services

- The Division of Information Services maintains central mainframe computer services for 17 large school districts as well as providing mini-micro computer services for 60 districts. A full range of software application systems is available for use by participating districts.
- Many Region 10 school board trustees had their first experience with videoconferencing when the required legislative update for returning trustees was provided via the EdNet10 videoconference network. Many of the trustees reported that the time saved by videoconferencing was significant.
- Region 10 assists in revising and implementing PEIMS. Region 10 representatives remain informed of latest PEIMS modifications and new data elements to provide training and help desk support to districts on reporting requirements.
- AEIS-IT is a software product designed specifically for Texas educators by ESC-10, enables users to disaggregate TAAS and end-of-course student performance data according to performance or demographic criteria for comparison to state accountability standards.

Infrastructure for Technology

- The EdNet10 data network continues to provide Internet, e-mail, Web hosting, list servs and access to NovaNet. Based on a survey of district needs, additional DS1 circuits were added to selected districts then multiplexed for increased bandwidth for the Internet. In addition, EdNet10 data negotiated fractional DS3 services for school districts with maximized data needs.
- The EdNet10 videoconference network has experienced unprecedented growth in the last two years. When districts reported that space was lacking for a videoconference classroom, a wireless mobile videoconference solution was developed and installed in 22 districts. The EdNet10 videoconference network now has over 115 endpoints, connecting 81 school districts, two charter schools, and two universities. During the school year 2001-02 alone, 12,874 hours of professional development, student and graduate coursework have been provided. Also by using videoconferencing 30,606 hours of travel were saved in 2001-02.



Education Service Center
REGION XI

Region 11 Education Service Center
Fort Worth, Texas • 817-740-3600 • www.esc11.net

Education Service Center, Region 11 (ESC-11) serves 80 public school districts, at least nine private schools, and 15 charter schools. The number of students enrolled in these schools ranges from 46 to more than 76,000. The ten-county region includes schools serving a metroplex of urban and suburban communities, as well as rural and remote schools serving farming and ranching communities. Within Region 11, nearly 33% of school-aged children qualify as economically disadvantaged, and 47% of the districts are considered rural, with distances limiting access to educational resources. Implementation of the *Long-Range Plan for Technology, 1996-2010* is beginning to overcome economic and distance limitations in the region. Equitable access to excellent educational resources represents a challenge, which is beginning to be met with the assistance of technology.

Teaching and Learning

Region 11 ESC provides:

- Help to implement the Technology Applications TEKS by aligning all staff development to the TEKS and developing grade specific multiday institutes for staff-development.
- Alignment for instructional media resources to the TEKS.
- Coordination of a statewide program—through a partnership with Intel Corporation and a Wagner Peyser Grant—to provide teachers and students with skills related to refurbishing and upgrading used computers.
- Coordination of a Cisco Academy coordination, leadership, training, and support for 30 Region 11 high schools and 53 Regional Academies in four states.
- Satellite-delivered electronic field trips coupled with Internet activities and other resources for curriculum integration.
- A collaborative of campus-based distance-learning sites and colleges and universities to offer advanced math, science, and foreign languages and concurrent/dual enrollment.
- Online resources such as Grolier Online Encyclopedia, Facts on File, and NovaNET, a credit-recover online curriculum.

Every year our 7th graders do a unit of study on Texas Indians. Each student is assigned a tribe on which to report. The report must include areas such as clothing, food, shelter, family structure, where this tribe is today, and general history of the tribe. A wonderful resource for this unit of study has been the Facts on File "American Indian History & Culture" database. It covers almost all of the required segments of the study and is very user-friendly with regard to ease of use for the students.

Belinda Scholl, Librarian, Southwest Christian School

- Media-on-Demand videostreaming to the teachers' desktops.
- On-site campus integration specialists to facilitate the integration of technology into the curriculum.

Educator Preparation and Development

Region 11 ESC provides:

- Over 200 regional staff development opportunities for teachers annually to help them learn to integrate technology into the curriculum.

When I started my training I had one computer in my classroom that I used for Accelerated Reader. Now my classroom has five computers (for students use), a scanner, colored printer, a 32 inch television and vcr, a digital camera, projector and a laptop for teacher use. I have used this technology to introduce the world of technology to my students. My students have access to the internet, Microsoft Office, Encarta and other learning software. Right now my students are learning to write newsletters and publish work. I have also introduced them to Power Point.

Robbye Hisey , Castleberry ISD

- Training for librarians, teachers, and administrators in the integration and use of digital online resources provided by the Texas Library Connection and Region 11.
- Coordination of a statewide SBEC-approved online Technology Applications Certification program to assist districts in implementing the high school Technology Applications TEKS and has applied to SBEC for a Master Technology Teacher Certification program.
- Professional development and institutes to assist districts in implementing the K-12 Technology Applications TEKS.

- A technology mentoring program that trains lead teachers to be mentors in instructional technology.

> ***Technology integration is a vital part of each school day and every subject. Tech Academy covered many different areas of technology, introducing me to new worlds I had not yet touched. I am now able to implement the use of new software to share with students to enhance their learning. TA allowed me to learn and develop new skills to pass on to fellow teachers and to our students.***
>
> Marsha Jenkins, Teacher, Krum ISD

- A "High-Tech Academy" offering advanced application and integration training to help districts implement the Technology Application TEKS.
- One-on-one technical assistance to individuals or committees at the Center's Technology Preview Center and over the Region 11 Telecommunications Network (RETN).
- Staff development opportunities annually to help districts implement innovative grants and individual technology initiatives.
- Training and staff development opportunities in the use and integration of videostreaming resources.
- Staff development opportunities using satellite-based distance learning.

Administration and Support Services

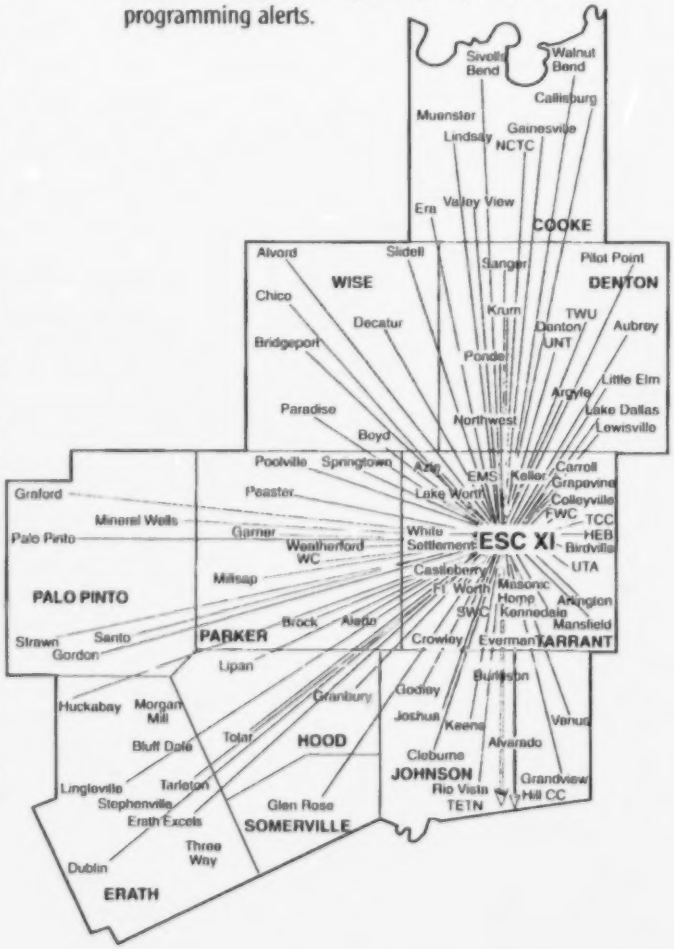
Region 11 ESC:

- Coordinates a peer review for district technology plans for recommendation to TEA for approval.
- Maintains a software and hardware preview center of more than 2,000 software and hardware products for teachers and administrators to access.
- Offers TIFTech Training for eligible districts to help them integrate Internet activities into the curriculum, develop administrative policies to manage the technology and its use, and develop technical skills to maintain and fully use the technologies.
- Coordinates regional technology initiatives and provides leadership for TIF, TARGET and other grant-writing collaborative efforts.
- Assists and trains campus librarians and library coordinators with administrative functions of Texas Library Connection.

Infrastructure for Technology

Region 11 ESC provides:

- Leadership and administration of the Region 11 Telecommunications Network (RETN) which serves as the communications infrastructure for voice, video, and data between Region 11 schools, Region 11, and through connectivity to TETN, TEA and other schools throughout the state.
- Connectivity and coordination through RETN to resources and distance-learning opportunities throughout the world via videoconferencing.
- Internet access to districts and campuses including network design, hardware purchasing assistance, free IP addresses, T1 line leasing and monitoring, troubleshooting, installations, technical assistance, Internet filtering and staff development.
- Coordination of video/two-way audio communications and instruction through RETN and its governing Board of Directors.
- Regional e-mail services.
- Digital upgrade and desktop access to the T-STAR network through training, user-group activities and programming alerts.



2101 West Loop 340
Waco, Texas 76712
254-666-0707

Region 12 Education Service Center
Waco, Texas • 254-666-0707 • www.esc12.net

Region 12 Education Service Center (ESC-12) assists more than 18,000 Central Texas staff members in 78 independent school districts, nine charter schools, and at least 20 private schools in attaining the Texas Education Agency's goal of excellence and equity in student achievement for all students and learners. Based in Waco, with satellite centers in Copperas Cove, Corsicana, and Hillsboro, ESC-12 serves 12 counties. ESC-12 includes districts ranging in size from 67 students on a single campus to one district with more than 29,000 students on 41 campuses. Within Region 12, approximately 48% of the school-aged children qualify as economically disadvantaged, and 56% of the districts are considered rural. Implementation of the *Long-Range Plan for Technology, 1996-2010* continues to overcome distance limitations, thereby providing more equitable access to educational resources. Infrastructure established as a result of implementing this plan gives all Region 12 districts access to the Internet and distance-learning opportunities.

Teaching and Learning

Integration of technology into everyday student learning in Region 12 schools has become more widespread over the past two years largely due to training and support provided by the ESC's Technology Specialists. Classes are engaging in more technology projects across the region via videoconferencing. Students are accessing current information on the Internet to enhance content learning. New high school technology applications classes are being offered as a result of ESC support. Activities and resources provided by ESC-12 include:

- Training and assistance in integration of technology into the curriculum including the implementation of the Technology Application TEKS on a regular basis through workshops, awareness sessions, advisory board meetings, and online activities.
- Instructional resources for classroom use offered through the Educational Technology Preview Center, T-STAR satellite system, the ESC-12 telecommunications network (EDLINK12), and the Instructional Media Center.
- Access to NovaNET, a valuable instructional tool, provided through the EDLINK12 Telecommunications Network which meets the needs of alternative education classrooms and a variety of other special needs students.
- Access to distance-learning opportunities provided via EDLINK12 for both students and teachers including training, student courses, curriculum extensions, and collaborative projects.
- Contracted technology support helping teachers and administrators become more technology literate.

Educator Preparation and Development

Region 12 districts have realized progress in preparing educators to use technology. Staff members are more current on the latest classroom software, business applications, and technology integration techniques. Districts are using the Internet for lesson planning and sharing with other districts. Access to continuing education has improved. Inservice opportunities have increased and technology competencies have improved. ESC-12 activities in this area include:

- Approximately 782 regional professional development opportunities over the past two years for teachers via distance learning and face-to-face learning sessions.
- Customized staff development activities for districts and campuses to meet specific curriculum and staff development needs.
- TIF training for 53 districts which includes instruction in integrating the Internet in the classroom, developing administrative policies to manage technology and its use, and developing technical skills to maintain the district technologies.
- One-on-one technical assistance as needed via the Internet, EDLINK12, telephone, in person, and on-site.
- Assistance and training to librarians to fully use the Texas Library Connection resources and implement the Library Standards.
- Alternative learning opportunities for teachers including the Intel Teach to the Future model.

Holocaust Video Conference

This experience provided the opportunity the students need to help them realize the importance of using videoconferencing as a reference source.

Teacher, Wiley Middle School, Waco ISD

Administration and Support Services

Administrators in Region 12 schools are more up-to-date on policies, current technologies, grants and other educational resources. Many districts have been able to integrate technology into instructional management and administration and increase their ability to assess students and maintain records. The use of e-mail has improved administrative and staff communications. The use of the Internet has provided access to federal, state, and private information and organizations such as ESC Region 12, TEA, etc. Activities and resources provided by ESC-12 to assist in this area include:

- A Technology Fair offering the newest technologies to assist in the planning process.
- An Educational Technology Preview Center maintained with software and hardware products for teacher and administrator access including adaptive/ assistive devices for special needs students.
- Leadership provided for TIF, TIE, NCLB, and other grant-writing and collaborative efforts.
- Software packages and training sessions in all areas of data management for school improvement.
- Training on how to use technology to support business services and all aspects of school operations.
- Assistance in selecting, securing, installing, networking and using technology systems more effectively.
- Training and assistance in implementing PEIMS.
- Technical assistance with T-STAR implementation.

Infrastructure for Technology

Expansion of infrastructure in Region 12 districts and schools through local, state, and federal funds has greatly impacted the technology opportunities of educators and students. Local infrastructures have expanded and connected to the regional network, increasing resources and strengthening network systems. Greater opportunities for curriculum enrichment and exposure to real-world applications have been provided. Distance-learning classes and activities are occurring in isolated rural districts, allowing student learning experiences that would not be possible without access to videoconferencing and facilitation by Region 12 specialists. Leadership and coordination is provided by ESC-12 of the 64-site EDLINK12 Telecommunications Network. This network offers educators Internet access, e-mail services, videoconferencing, and voice communications. With videoconferencing, distance learning, and Internet access the acknowledged disparity between students in the region and their statewide counterparts has been reduced. Professional development and technical assistance is provided to educators and administrators in technology planning and integration of technology into all campus and district plans. Assistance is also provided in hardware and software purchasing, network design, installation, configuration and troubleshooting.

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REGION XIII
EDUCATION SERVICE CENTER

5701 Springdale Road • Austin, TX 78723-3675
512.919.5313 • http://www.esc13.net

Region 13 Education Service Center
Austin, Texas • 512-919-5313 • www.esc13.net

Region 13 Education Service Center (ESC-13) strives to provide excellent services and products to improve instruction to the seven higher education institutions, 59 school districts, 11 charter schools and more than 150 special, private, parochial, and alternative schools in the 16-county area that it serves. Within the public school districts are a total of 273,492 students that are an ethnically diverse population composed of 9.6% African American, 34% Hispanic, 53.5% White, 2.5% Asian/Pacific Islander, and .3% Native American students, with 35.7% categorized as economically disadvantaged. More than 19,000 teachers educate these students.The mission of ESC-13 is to improve student performance as demonstrated by the TAAS passing rates, which have exceeded the state average during 2000-01 in both Grades 3-8 and exit level.

Teaching and Learning

Region 13 takes a proactive role in strengthening teachers' and students' skills by fostering the development and integration of rigorous TEKS into technology-related classroom activities and into electronic instructional materials. Project E-Teach, a TIE grant initiative in the 2000-01 school year, partnered ESC-13 with 39 public school districts, one charter school, and three private schools to:

- Provide five days of face-to-face technology integration training on the educators' 165 home campuses for approximately 1,500 educators.
- Assist teachers in creating Web-based projects to be used in the classroom correlated to TEKS.
- Provide mentors to partnering districts in excess of 870 hours in 2000-01.

Region 13's Distance Learning network allows:

- Districts to share teachers for areas that are difficult to staff, such as Czech I, Spanish I, and American Sign Language.
- Dual enrollment opportunities in courses such as Government, Speech, Sociology, English, and Marketing through partnerships with various community colleges.
- Virtual field trips to a variety of providers such as the Challenger Learning Center and the Ocean Institute.

Region 13's Technology Preview Center provides educators opportunities to:

- Preview software titles, hardware options, books, and emerging technologies.
- View demonstrations from various Business Alliance members.
- Receive technology-related information via the *Technology News* newsletter that is distributed three times a year to every educator and administrator in Region 13.

Additionally, Region 13:

- Makes available assistive technology devices and computer access peripherals through loans to students with disabilities.
- Offers assistive technology application training and assessments.
- Maintains an instructional media library and a science materials center.
- Provides training and support for 23 local Cisco Academies that teach students to design, build, and maintain computer networks.
- Holds advisory group meetings such as Visionaries in Technology and Learning (ViTaL) three times each year to solicit input and feedback from the districts.
- Provides project-based TIFTech Training to approximately 165 educators from public and charter schools.
- Assists districts in technology planning and assessment to identify current technology profiles, establish goals, and monitor progress as measured by the *Texas STaR Chart*.

Currently, Region 13 has an ongoing Video on Demand pilot. During this pilot, four districts (urban-rural in size and encompassing all grade levels) are participating in bringing quality instructional videos to the desktop to enhance instruction. Results of this pilot will be available in early winter 2003.

Educator Preparation and Development

To use technologies effectively, educators must be provided high-quality professional development through a variety of delivery methods. ESC-13 prepares educators by providing:

- An alternative certification program for certified and noncertified educators to obtain the Technology Applications (Grades 8-12) Certificate. (28 certified, four noncertified educators)
- Java programming training for 25 educators to assist districts in implementing upcoming AP Computer Science changes.

- TifTech Training to 1,280 (2000-01) and 1,426 (2001-02) educators in the areas of Foundations, Curriculum, Technical and Policy and Leadership.
- Various professional development opportunities related to technology integration for 800 educators (2000-02).

The Texas Library Connection (TLC) provided:

- Training and support for approximately 446 school libraries in 60 districts and charter schools in ESC-13. Approximately 900 educators were served during the period 2000-02.
- Train-the-Trainers model for 25 master trainers.
- User Group Training updates in 286 schools.
- Training for over 50 clerks and paraprofessionals.

During Project E-Teach (2000-01) 2000 educators received:

- "Just-in-time" Web-based training.
- "Just-in-time" printed support materials.
- Professional journals related to technology integration for each educator.
- Membership privileges in the International Society for Technology in Education (ISTE).
- Conference registration to the Texas Computer Education Association (TCEA) Conference (180 educators).
- Conference registration and travel for nine educators to Chicago for the National Educating and Computing Conference.

Additionally, Region 13:

- Provides training for educators offering courses via Region 13's Distance Learning Network.
- Provides facilitation and support for the Cohort Administrator Certification Program (CACP) Masters On Line program.
- Provides support and assistance in technology planning and E-Rate assistance.
- Provides training and support for the T-Star network and maintains a listserv and users group.

Administration and Support Services

ESC-13 provides AEIS-IT, a comprehensive test data analysis tool for TAAS and EOC aligned to the TAKS objectives. During the 2002-03 school year, 56 districts in Region 13, including all Title I districts, will have access to this tool. In partnership with Texas Association for School Administrators (TASA), ESC-13 provides a Technology Leadership Academy. This four-day academy has been held twice during 2000-02 and has trained 27 superintendents and 110 campus principals in the Region 13 area on effective technology leadership skills. ESC-13 offers no-cost, high-end technical trainings. These trainings provide 90 district-level LAN/technical support personnel in 33 districts opportunities to improve their technical skills. In addition, the ESC provides a one-year, no-cost license for online technical support training. Other offerings are PEIMS-compliant administrative software and PEIMS-specific training and monitoring.

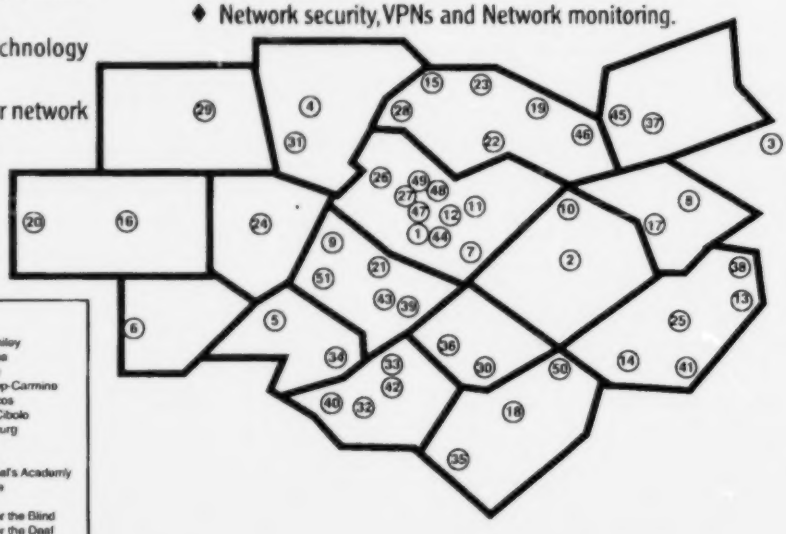
Infrastructure for Technology

Region 13's TXED network was established in 1997 and currently connects:

- 48 Public School Districts.
- 250 Instructional Campuses/Administrative offices.
- Three Charter Schools.
- Four Institutes of Higher Education.
- Two other entities.
- Approximately 116,000 students.

Services provided by Region 13's TXED regional network include:

- Internet Access including hosted e-mail server.
- Firewall, CIPA compliant filtering and caching.
- Video Conferencing and Video on Demand.
- Voice and Fax over IP.
- Secure data transmission.
- Network security, VPNs and Network monitoring.



O Distance Learning Sites

1. Austin Community College	18. Gonzales	35. Nixon-Smiley
2. Bastrop	19. Granger	36. Prairie Lea
3. Blinn College	20. Harper	37. Rockdale
4. Burnet CISD	21. Hays CISD	38. Round Top-Carmine
5. Comal	22. Hutto	39. San Marcos
6. Comfort	23. Jarrell	40. Schertz-Cibolo
7. Del Valle	24. Johnson City	41. Schulenburg
8. Dime Box	25. La Grange	42. Seguin
9. Dripping Springs	26. Lago Vista	43. SWTSU
10. Elgin	27. Lake Travis	44. St. Michael's Academy
11. ESC XIII, Preview Center	28. Liberty Hill	45. Thorndale
12. ESC XIII, Conference Room F	29. Llano	46. Thrall
13. Fayetteville	30. Luling	47. Tx Sch for the Blind
14. Flatonia	31. Marble Falls	48. Tx Sch for the Deaf
15. Florence	32. Marion	49. University of Texas
16. Fredericksburg	33. Navarro	50. Waelder
17. Giddings	34. New Braunfels	51. Wimberley

Education Service Centers

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Region 14 Education Service Center
Abilene, Texas • 915-675-8600 • www.esc14.net

While much of the population and economic indicators have remained the same, great changes have occurred in schools served by Region 14 Education Service Center (ESC-14) in the past two years. Even though almost half of the school-aged children qualify as economically disadvantaged and over 80% of the districts are now considered rural, student achievement scores continue to exceed the state average and all districts continue to be rated Recognized or Exemplary. Technology is making a difference in the rural communities and hope is that progress will continue.

Teaching and Learning

Instructional technology and curriculum consultants have provided technical assistance and professional development in the areas of technology integration into the curriculum and technology proficiency. Region 14 has provided workshops that address the technology essential knowledge and skills (TEKS) throughout the curriculum.

Distance-learning consultants have trained dozens of district staff members in the methods of delivering instruction over interactive television. Each of the 43 schools districts has a fully functional distance-learning classroom system at its high school campus. Students in many rural districts participate in high school and college courses via interactive TV. Subjects such as Spanish, Calculus, Art, College Algebra, Sociology, History, and Economics are being delivered over this medium. For the past two years the Texas Distance Learning Association has awarded its K-12 Teacher of the Year to staff here in this region.

Ninety percent of the districts in Region 14 have participated in some kind of distance education activity. Kindergarten and first-grade students have taken a virtual field trip to the North Pole to visit with Santa Claus. Third- and fourth-graders have visited the Indianapolis zoo to learn more about penguins. Middle school students have worked with engineers in Ohio to develop simple machines and have visited aquatics research centers in Florida to learn more about sharks and the relationships between geometry and underwater life. High school students from Abilene participated in a discussion concerning stem cell research with professors from Georgetown University.

The ESC is also partnering with Kansas University, a Brazilian aircraft manufacturer, and Sidney ISD so that students in Sidney can participate with students in Sao Jose dos Campos, Brazil, in a cultural exchange.

Educator Preparation and Development

Region 14 ESC provides:

- Technical assistance and professional development in the areas of TEKSTAR, AEIS-IT, T-STAR, Texas Library Connection (TLC), PILOTS, technology integration, and technology planning.
- Training toward certification in technology applications for district staff members (in partnership with ESC-11).
- A facilitated preview of many learning resources, especially those provided through state license and adoptions.
- E-mail services and support for web sites. Links to school district web sites is available online at http://www.esc14.net.

Administrative and Support Services

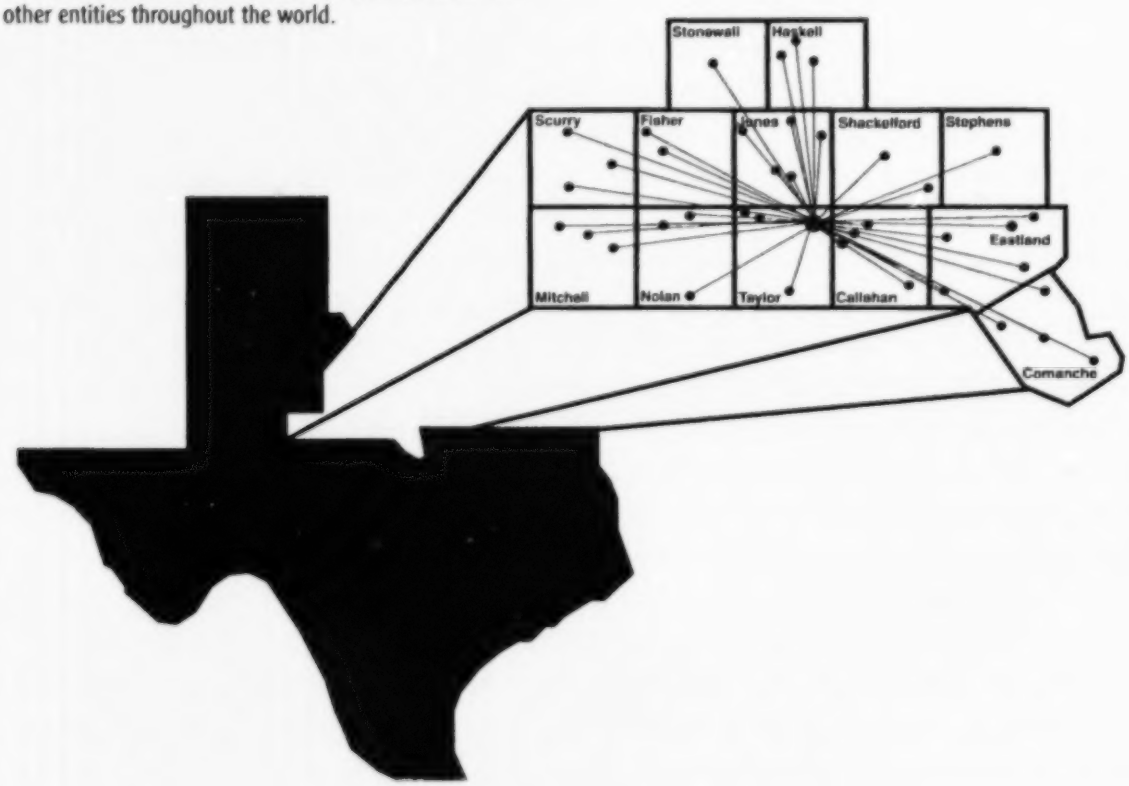
- One of the projects that Region 14 ESC is most proud of is the development of an administrative videoconferencing network. This system enables superintendents to communicate with each other and Region 14 staff via a desktop videoconferencing system. By taking advantage of these systems, administrators have saved valuable telecommunications dollars. Without the grant funding that state and federal governments provided, this network would not have been possible.
- Region 14 provides technical assistance and training support to district personnel in implementing PEIMS.
- Comprehensive training programs are offered to administrative and support personnel in order to build their technology skills and enhance their effectiveness.
- ESC-14 offers districts access to purchasing cooperatives so that technology can be acquired in the most cost effective manner.

Technology Infrastructure

Local commitment along with grant funding has greatly improved the technology base in the school districts the past two years. The wide area network (WAN) has nearly doubled its capacity since the year 2000. Computer workstations have increased in number from 5000 to over 9000 in that time. All campuses now have high-speed Internet access. All administrative office buildings are also connected to their district networks. The ratio of staff to computers is almost 1:1 and the ratio of students to computers has steadily moved toward its goal of 3:1.

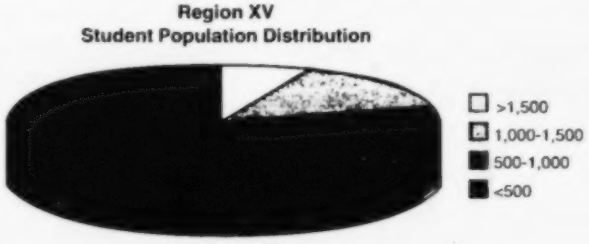
Region 14, with the help of much-needed grant funding, has helped build a videoconferencing network composed of over 100 video systems. There are distance-learning classroom endpoints located in every high school and desktop endpoints in administrative offices. This video network enables school districts to communicate with other entities throughout the world.

The region-wide telecommunications consortium that is a part of Region 14 ESC continues to build and enhance the data, video, and voice network in this area to bring equity of learning to the students and staff of its members. ESC-14 continues to offer technical support to districts for their LAN and WAN connectivity. Region 14 also provides assistance in technology planning and network management to all local area districts.



Region 15 Education Service Center
San Angelo, Texas • 915-658-6571 • www.netxv.net

Eighty-four percent of districts in the 18-county area served by Region 15 Education Service Center (ESC-15) are considered rural, and 60% have fewer than 500 students. Only Tom Green County is designated as urban. San Angelo is home to the largest school district in Region 15 and is considered the major metropolitan area. The other 42 districts in Region 15 are geographically dispersed across 25,000 square miles. Although 72% exceed the state average of 48.5% economically disadvantaged, TAAS scores of economically-disadvantaged students continue to show gains. Progress toward implementing advanced technology has been tremendously enhanced during the past 24 months because of the infusion of grant funds from a Technology Integration in Education (TIE) award and Telecommunications Infrastructure Fund (TIF) awards. With the addition of a new state-of-the-art Technology Training Facility and the award of a $2.8 million TIE grant, ESC-15 has embarked on an intensive path of upgrading and increasing distance-learning capabilities, while continuing its commitment to supporting student achievement and enhancing classroom instruction through the integration of technology.



Teaching and Learning

Region 15 ESC:

- Facilitated the connection of more than 631 two-way interactive field trip connections to multiple districts to support and enrich curriculum and 450 staff development connections to multiple districts by ESC-15 staff.
- Provided access to electronic field trips to thirty seven districts. Both line charges and content fees are funded by Region 15.
- Provided to districts through the TIE4 grant, more than $62,000 of hardware, software, training and personnel unit to each participating campus. Distance learning rooms have been installed in specific districts with TIE4 funding.
- Facilitated the organization, for nine districts, of a collaborative for NovaNet , an online comprehensive courseware system that delivers thousands of hours of standards-based, interactive curriculum.
- Provided access to video-on-demand to nineteen districts. This pilot project provided content from two vendors in an effort to evaluate the effectiveness, ease of use, and curriculum benefit to the K-12 classroom.
- Facilitated the connection over ITV to three community colleges for the purpose of delivering dual-credit courses. This project has grown from one community college connecting to three, from six districts receiving content to nineteen and from approximately 15 students receiving dual credit to over 100 students participating.
- Provided access to high school teachers delivering courses over ITV including the Virtual School Pilot (VSP).
- Organized a Summer Computer Camp for students in Grades 4, 5 and 6. The focus of the camp is to increase computer literacy skills while learning about the subject matter being taught in a cooperative, hands-on, activity-based curriculum.
- Offers opportunities for software preview, including scheduled, announced, open houses in the Preview Lab and facilitated on-site preview upon request by districts.

Educator Preparation and Development

Region 15 ESC:

- Established the instructional Technology Leader on Campus (iTLC) group to disseminate an electronic profile correlated to state Technology Applications standards. This group evaluates educator proficiencies, helps determine training needs, disseminates information relating to the best practices and emerging technologies in educational technology. It also disseminates the *Texas StaR Chart* data in graph form to the iTLC representative and district administrators.
- Provides an extensive training-of-trainers model under the TIF grant awards.
- Offers multiple staff development opportunities, training district instructional personnel in the use of educational software and hardware applications for the integration of technology to enhance classroom curriculum.

- Holds a MediaTech Roundup for staff members from Region 15 schools to interact with print and electronic media vendors. This exposition includes hands-on training, vendor presentations and exhibits.
- Offers on-site training at request of local districts.
- Offers hands-on, end-user equipment training, as well as Instructional Design and Delivery training for curriculum integration of distance-learning content.
- Provides support and access to online content for the Technology Applications Teacher Certification content.
- Provides support and access to online content for the Learning Resource Endorsement. Region 15 is collaborating with the University of North Texas and 17 teachers from 7 districts, in supporting the placement of a certified librarian in the district.
- Provides support to the Intel Teach to the Future to 17 Region 15 districts.

Administration and Support

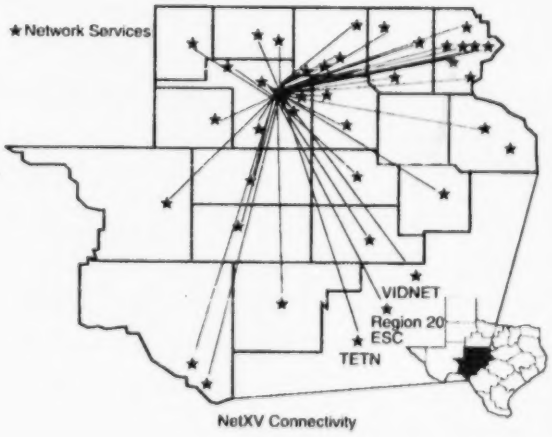
Region 15 ESC:

- Updated and expanded its web site to provide a menu of services and contacts correlated to ESC Departmental areas, staff development resources, an online staff development catalog, and online registration for staff development opportunities.
- Assists administrators, teachers, and other instructional leaders in the disaggregation of TAAS data. ESC-15 has provided the software with data to each district, as well as training in how to use this software for maximum instructional benefits.
- Developed a regional technology plan and offers extensive training and technical assistance to districts for technology planning.
- Provides technical assistance and content training to TASA's Technology Leadership Academy.
- Provides technical assistance and financial support through TIE4 in the automation of eleven campus libraries. All Region 15 districts are Texas Library Connection (TLC) members.
- Provides content support to T-STAR initiative. TIE4 provided the T-STAR digital upgrade to 27 districts.
- Applied for E-Rate discounts on behalf of NetXV Learning Resource.
- Assists local school districts with grant proposals, including training and technical assistance.

Infrastructure for Technology

Region 15 ESC provides:

- Internet Connectivity, e-mail, DNS, gateway virus scanning, regional level firewalling, Web hosting, bandwidth management, monitoring, voice/fax over ATM, Interactive two-way videoconferencing, and other Internet services.
- Network development assistance.
- Technical training and assistance for all site managers in NetXV districts.
- Security solutions throughout the region, including 30 Cisco PIX firewalls, two Cisco Intrusion Detection Sensors, and a Cisco Policy Manager.
- Regional level filtering solutions and evaluations of antispam products and services.



Region 16 Education Service Center
Amarillo, Texas • 806-677-5000 • www.esc16.net

Region 16 Education Service Center (ESC-16) is located in the Texas Panhandle. The Panhandle consists of 64 school districts with 220 campuses in a 26,000 square-mile area. Many area residents must drive two hours or more to reach Amarillo, the largest city, and the economic and geographic center of the Panhandle (approximately 175,000 people). School districts in ESC-16 have an average daily attendance of about 78,000 students, with individual districts ranging from fewer than 30 to more than 29,000 students and the total regional school staff numbering more than 11,400. The school population includes 47.5% who are economically disadvantaged.

Teaching and Learning

- Services offered include: NovaNET, an electronically delivered individualized instruction service; Cisco Networking Academies, a specialized networking curriculum for high school students; Sponsored Curriculum including IT Essentials, webmastering and Unix; network services including secondary DNS, e-mail, web server service, Internet filtering and network maintenance; and two annual technology conferences. The number of participants and districts obtaining these services has increased.
- Assistance with technology planning has resulted in 98% of Region 16 districts having TEA-approved technology plans for E-Rate funding. Districts used the results of their *Texas STaR Chart* to plan their staff development and hardware needs to promote student learning.
- Several workshops were offered to assist districts in selecting software through the services offered through the Preview Center. New software is constantly added to the on-line searchable database.
- Region 16 ESC has administered a Technology Integration in Education (TIE) grant and several Telecommunications Infrastructure Fund (TIF) grants. These grants included purchasing the following for the campuses involved: videoconference system equipment, furniture for the videoconference room, a cart with 15 wireless laptops, a digital camera, a scanner/printer/fax machine, Microsoft Office Premium with FrontPage, and ten elementary software programs and training. The 130 teachers involved in the TIE grant attended four days of integration training and three days of methodology videoconference system training during the summer of 2001. During the 2001-02 school year, these teachers presented two different technology integration lessons over the videoconference system to classes at other school districts.

Educator Preparation and Development

- A variety of technology integration workshops were offered year-round. Workshops provided training for TIFTech, Microsoft Office products, integration of the Internet into the classroom, the use of Windows and browsers, and several educational software programs.
- The ESC sponsored the conference titled Education Technology for the 21st Century, which was attended by more than 1,000 area educators. This conference attracted over 75 independent exhibitors and provided technology integration examples and strategies for all participants. The conference had keynote speakers, videoconferencing, Classrooms in Action, a hardware hands-on area with a variety of integration tools—such as digital cameras, scanners, and palms.
- As a result of the TIE and TIF grant training, regional teachers have increased their integration of technology into the curriculum. These teachers have, in turn, offered staff development on integrating technology into the curriculum to other educators in their own facilities, in other districts, and at the annual technology conference.
- Administrators are taught the use of Professional Development and Appraisal System software for management of teacher evaluation through the Administrative Services Division.
- During the past two years, Region 16 administrators have been invited to participate in the Technology Leadership Academy, which is funded by a statewide grant from the Gates Foundation. This training provided the administrators with a laptop and four days of leadership skills using technology. A total of 66 administrators have participated in this program.
- Professional development delivered through the videoconference network has provided a variety of training opportunities to the districts. This method of distance learning has allowed districts the ability to receive training without the significant cost of travel and has saved hours of travel time for participants.

- ESC-16 Technology Services staff supported the schools' use of the videoconference system by helping to coordinate classes. Approximately 85 classes were shared among the districts on both a semester and a full-year basis.
- Videostreaming allows teachers to access and view instructional video clips via the Internet. Sixteen districts contracted to receive this service during the 2001-02 school year. Media Services provides a library of materials such as laserdiscs, videos and CDs. Districts were surveyed to determine their needs for media materials. This resulted in the purchase of over 500 new video titles that are now available to districts. An updated catalog was distributed to all districts.
- The use of, and enrollment in, the Texas Library Connection (TLC) has increased in the region because of the efforts of the Technology Services staff. Several workshops were offered each semester for librarians, as well as a library strand at the technology conference. The staff has also promoted TLC through TIF grant-writing assistance.

Administration and Support Services

Over 70 participants a year attended the Technology Coordinators Conference, which was held in April 2001 and 2002. Hosted by the Service Center, this conference brought in company representatives from Cisco, Hewlett-Packard, Panduit, Alpha Smart, Citrix and Dell. In addition to this conference, workshops in Windows Security and Windows Troubleshooting were offered to assist and train school technicians.

The ESC is a strong proponent and supporter of networks in the region. Technology Services staff continues to participate in and promote the planning, design, funding, installation, utilization, and support stages of the development of these networks. We promote the school to community communication by assisting and providing training in web page design and by hosting districts' web pages.

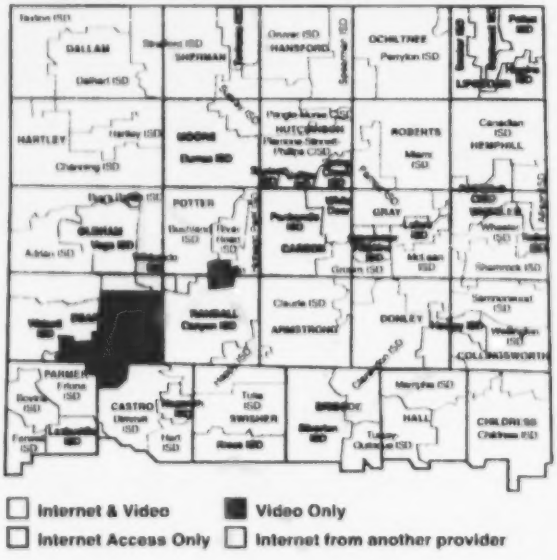
PEIMS data from our region has been 100% complete for every reporting deadline, and errors are reduced in number with each submission. This past year, the PID's were down to single digits for the entire region.

Several divisions offer regular training to assist districts in the utilization of technologies to improve school operations, such as TEKStar, AEIS-IT, CLASS, School Board Training, WinSchool, Health Office Enterprise, and PEIMS reporting.

Infrastructure for Technology

- In 1996, only five of the 65 districts in Region 16 had direct connections to the Internet. In 2001, all districts had direct connections, and 90% of the classrooms were connected. Fifty-two entities are supplied CIPA compliant filtering. Forty-seven videoconferencing classrooms are included in the regional network and plans are in place to increase this number. Fifty-one libraries in the region belong to TLC.
- The ESC-16 Technology Services Department added staff to provide support for the districts' educational technology needs. It continually sends staff to training to maintain a high level of expertise in current technologies and implementation skills.
- Support groups, technology committees, listserves and region-wide technology meetings play an important role in regional educational technology implementation and integration.
- Region 16 ESC led region schools in developing the region16.net video and data network managed by Region 16 staff. The Ednet16 consortium used Chapter 41 monies to subsidize telecommunications costs to all Ednet16 member districts, as well as to maintain network integrity and upgrades.

Districts Utilizing *region16.net* Services



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Region 17 Education Service Center
Lubbock, Texas • 806-792-4000 • www.esc17.net

Region 17 Education Service Center (ESC-17) serves 59 school districts on the South Plains of Texas. The region includes 21 predominantly rural counties, which cover more than 18,000 square miles. Twenty-four of the districts have fewer than 250 students. While farming and ranching has traditionally been the major economic base, education and medical services support a growing population. While some districts are wealthy, 53.9% of the students are economically disadvantaged.

Teaching and Learning

The Media Division of ESC-17 supports implementation of the Texas *Long-Range Plan for Technology, 1996-2010*, with a full range of services, both in Lubbock and on-site in districts. A 600 square-foot Technology Preview Center and teacher workroom, the Creative Corner, provide teachers with access to more than 100 software programs, 60 CD-ROMs and 240 laser discs, in addition to computers, scanners, nonlinear editors, color printers, laminating machines, and other state-of-the-art technologies. Educational technologists offer introductory software training and customized workshops in a fully equipped computer lab at the ESC and at computer facilities in the districts. More than 10,000 video programs, laser discs, and CD-ROMs are available at ESC-17. Teachers throughout Region 17 can access the Media Center Catalog of video materials using any computer equipped with access to the Internet. Teachers can search the entire catalog and place orders online without filling out a request or calling a booking clerk. In addition to the online booking system, the Media Division offers, at no additional cost to districts, the six Grolier encyclopedias.

In January 2001, the Media Division began offering digital video programs to schools via reproduced CD-ROMs. The digital titles can be played from the CD-ROM on a basic computer or the files can be copied to the teacher workstation or campus file server. Once copied, the district can use the titles in perpetuity.

In January 2002, the Media Division expanded the digital video offerings by purchasing additional digital rights and offering the title via computer hard drives installed on local area networks (LAN) of school campuses. By using campus LANs rather than streaming via the Internet, districts conserve their Internet bandwidth.

Educator Preparation and Development

Fifty-nine districts have participated in the TIF Tech Training offered by ESC-17. The computer lab at ESC-17 includes 36 PC computers with direct Internet access. Both sections include an overhead monitor with VCR. Technology specialists teach regularly scheduled workshops in the labs throughout the year. Specialized computer training is scheduled at the request of districts, either in the labs or on-site in the districts. Technology specialists coordinate presentations by software and computer vendors. Working with the coordinator of curriculum and instruction, educational technologists provide workshops and individualized support to help districts meet the performance descriptions in the TEKS. A train-the-trainer model is being developed to help teachers implement the Technology Applications TEKS.

Administration and Support Services

Regularly scheduled meetings for administrators address the issues of technology planning and integration of technology into curriculum. Grant-writing assistance is available to districts seeking additional funding for technology solutions.

The Information Management System Department regularly trains district personnel on the use of the State Computer Business Application, PEIMS Application in the RSCCC software and the Chancery WinSchool Student software.

Infrastructure for Technology

ESC-17 has a regional plan for video and data network. The ESC and MC/WorldCom provide direct access to the Internet for 44 school districts in the region. With grant-writing assistance from the coordinator of planning and development at ESC-17, 59 school districts have received more than $16 million from the Telecommunications Infrastructure Fund Board (TIFB) for Internet access and distance learning.

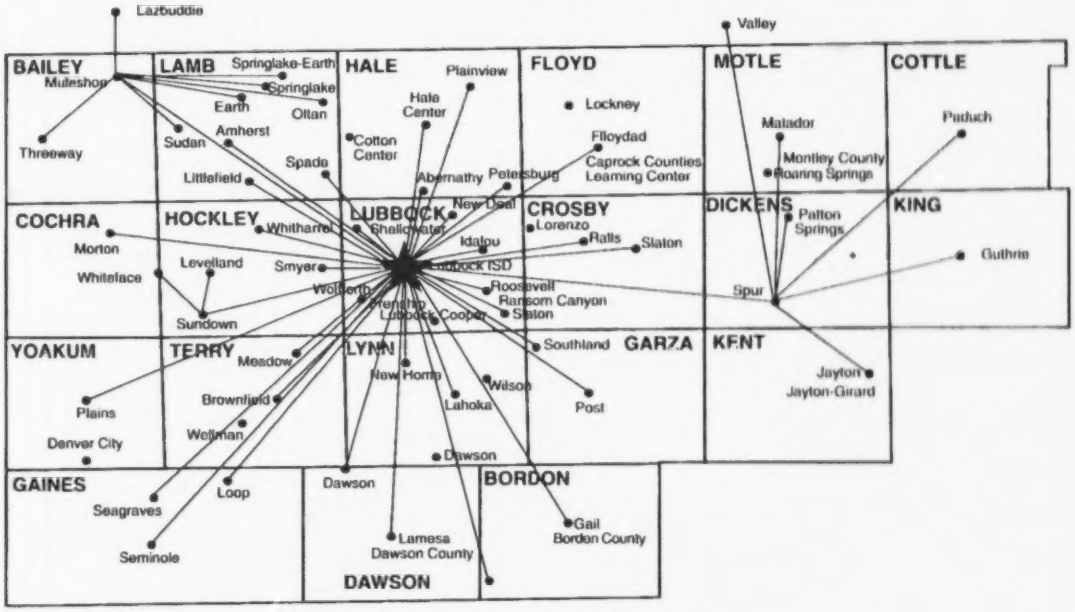
The Region 17 Video Network consists of a central hub (a 54-port MCU) located in Lubbock with smaller MCUs in Spur, Muleshoe, and Sundown. Networks in Spur and Muleshoe allow for continuing Internet service by local telephone exchange carriers; the Sundown-area network is a countywide service arrangement. Classrooms at each site include 32" monitors, microphones, a document camera, a Smart Board, and automatic tracking video cameras.

A nine-member committee of superintendents manages the Region 17 Video Network. Members of the management committee are elected by membership of the regional collaborative to ensure representation by large and small, wealthy and poor, and urban and rural school districts. ESC-17 is the fiscal agent for the collaborative.

The management committee determines priorities for network programming. During the school day, advanced placement and dual-credit courses are the first priority. Shared courses, taught by one district with student participants from several districts, are the second priority. Professional development for both teachers and administrators are the third priority. Incidental meetings and conferences may be scheduled as time allows. In the evening, similar priorities have been identified, with college and university courses being the first priority and professional development opportunities being the second priority. Again, incidental meetings and conferences will be scheduled as time allows.

Production services currently available at ESC-17 include: taping of satellite programs for delayed viewing; reception of live teleconferences; video taping at ESC-17; video taping in school districts, on campus or at school events; editing tape shot at ESC-17; editing tape shot in school districts; production of video tapes, including integration of video, audio, and graphics; delivery of taped programs via satellite; and delivery of live programs via satellite.

Education Service Center
Region 17 Video Network



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Region 18 Education Service Center
Midland, Texas • 915-563-2380 • www.esc18.net

Region 18 Education Service Center (ESC-18) is located at Midland Air Terminal, between Midland and Odessa in the Permian Basin. Serving 33 school districts and a state school in 19 counties, Region 18 is the largest education service center in geographic size in Texas. The population is as diverse as the terrain, with a large Hispanic influence and a rich Tex-Mex culture. Most of the districts are in small, rural communities and are dependent upon the oil industry or farming and ranching for economic support. Although traditionally known for its vast oil reserves, the greatest resource of the Permian Basin and Trans-Pecos areas of Region 18 is its friendly people.

Teaching and Learning

Region 18 ESC provides a wide variety of opportunities to schools that support implementation of the Texas *Long-Range Plan for Technology, 1996-2010* as well as regional and local technologies. A few examples include: staff development on integrating the resources of the Internet and technology into the curriculum; a bimonthly technology e-mail newsletter "The Online Educator" sent to all superintendents and principals in Region 18 and more than 500 educators worldwide; training in many types of software applications; and a Cisco Academy to train teachers to teach networking technology to high school students. Region 18 ESC also offers staff development on integrating technology into the curriculum with special emphasis on the Technology Application TEKS. Region 18 ESC trains educators with TEKStar, a resource bank of lesson plans and strategies that meet the performance descriptions in the TEKS in 55 curriculum areas. This activity includes training and on-site technical assistance in the use of this important software package. Instructional technology consultants also provide on-site assistance in the development, implementation and evaluation of district and campus technology plans. Region 18 ESC also provides assistance with AEIS IT, a software program that produces graphs and reports on student, campus, and district performance. This program will also produce annual and longitudinal data comparisons as well as comparisons of local performance to current state accountability standards. Region 18 ESC provides a variety of ways for teachers to preview up-to-date instructional technology resources at home, on campus, or at the ESC.

Educator Preparation and Development

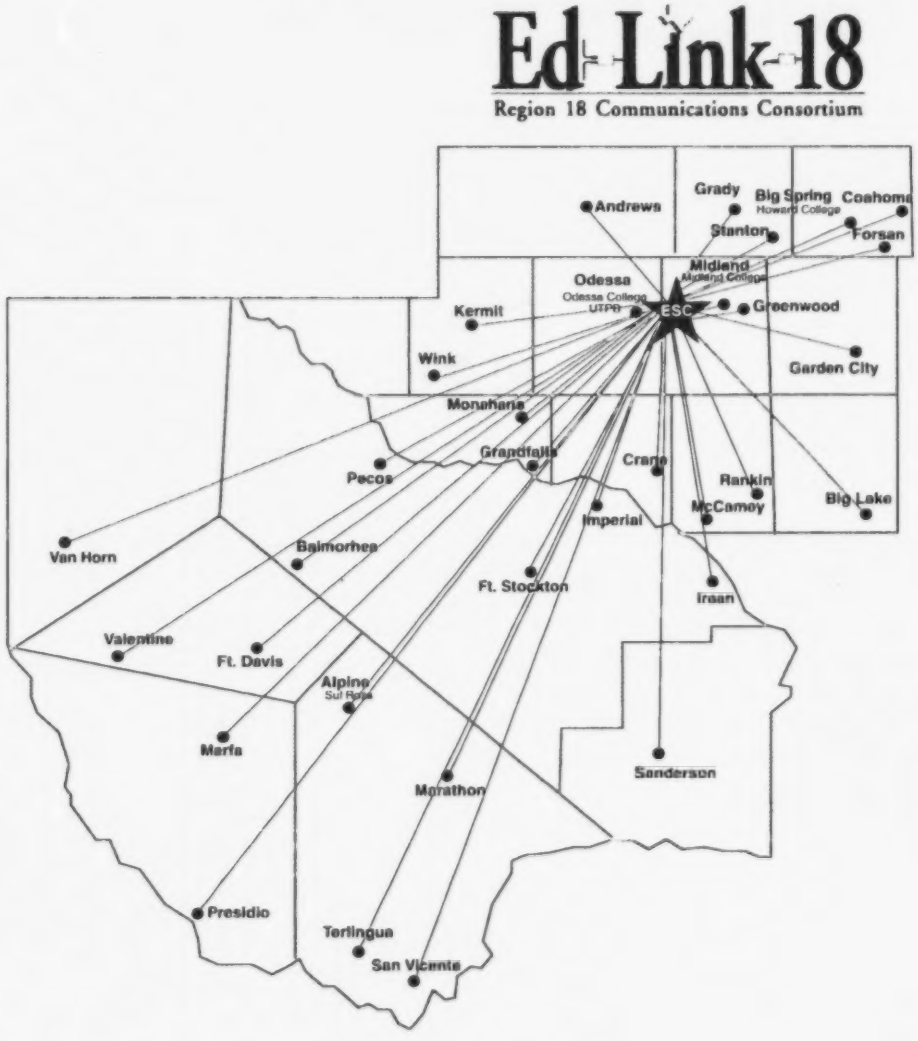
Region 18 ESC is a collaborative partner with Midland College in preparing preservice teachers through the Region 18 ESC Teacher Certification Program. Professional staff development in technology is offered to preservice teachers through this partnership. This staff development includes an online course covering technology essentials and instruction by Region 18 ESC Instructional Technology consultants. The coursework includes technology pedagogy and professional responsibilities as well as instruction in the Technology Applications TEKS. Professional development is also provided to all Region 18 educators on how to integrate technology and the Internet into classroom instructional programs. Professional development is also provided to teachers through the use of distance learning via the interactive videoconferencing units connected to the EDLINK 18 wide area network. The infrastructure is in place so that every school district, university and college in Region 18 can participate in professional development through distance learning.

Administration and Support Services

Region 18 ESC provides a broad base of training for administration and support services across all components of the ESC. The Information Systems component provides training and support on the PEIMS data standards. Training is also provided on the administrative use of PEIMS data and how it is used in the accountability system to promote student achievement. Technical assistance, videoconferencing, telephone support, newsletters, and other correspondence are provided by Region 18 ESC Instructional Technology and Telecommunications staff to Region 18 school administrators and support staff. Training programs to assist districts in using technology resources in all aspects of school operations is an ongoing effort at Region 18 ESC. The ESC staff is highly capable and client-centered, providing proactive leadership to support schools, districts and individuals in integrating technology into instructional management and administration.

Infrastructure for Technology

EDLINK18 was organized in 1996 to build an electronic network connecting students in West Texas to the information superhighway. Superintendents and other district-level educators, Region 18 ESC administrators, deans of colleges and universities, and several public librarians in Region 18 collaborated on this project under the leadership of Region 18 ESC. The vision of this collaboration was to build a network within Region 18 to provide every school with Internet access, e-mail, File Transfer Protocol and other intranet services. Through the connections of T1 lines, all members of EDLINK18 connect to the hub site located at Region 18 ESC. EDLINK18 has expanded to include interactive videoconferencing. Through grants and local funds, every district in Region 18, two colleges, three universities and Region 18 ESC now have this capability. This network is one of the largest networks of this type in the nation, having the capacity to dial to any other site in the network without scheduling through the hub site. Furthermore, any site in the network is able to dial to other similarly equipped sites anywhere in the world through a PRI line. Students now have the opportunity to attend college-level classes for dual credit via the EDLINK18 videoconferencing system; teachers can attend professional meetings and receive staff development and training; and community members are provided with opportunities for extension courses. Through this electronic network, students and their teachers have access to a virtual bridge, spanning the barrier of distance to the world of information.



Region 19 Education Service Center
El Paso, Texas • 915-780-1919 • www.esc19.net

Region 19 Education Service Center (ESC-19) is located in El Paso, Texas, along the Rio Grande, in the far western corner of Texas. The Region 19 ESC service area is recognized for its rich border culture and diverse population. Twelve school districts with more than 215 campuses in El Paso and Hudspeth counties are served by the ESC. Over 70% of the served population is economically disadvantaged and 34% are limited English proficient. By providing telecommunication networks, educational technology, and instructional media services to the entire service area, Region 19 ESC is committed to equitable programming and support to all districts.

Teaching and Learning

The Technology and Instructional Media Services department of ESC-19 offers a variety of professional development opportunities in the area of Instructional Technology. Region 19 ESC:

- Implements the Technology Applications TEKS and the Teaching and Learning Indicators from the *Texas STaR Chart* through institutes and workshops by integrating the Internet and technology applications into the content areas.
- Provides technical support and customized training to local districts.
- Offers over 30 different technology sessions. The focus of technology sessions has changed from application knowledge to trainings that include curriculum integration strategies, TEKS alignment, computer literacy, technology planning, technology policy and leadership, and technology management.
- Provides technology institutes for administrators, designed to foster support for the implementation and management of classroom technology.

In addition, Region 19 collaborates with and assists local districts by:

- Providing training in best practices in distance education techniques.
- Supporting TIF awardees with high-quality TIFTech Training.
- Providing information, training and technical assistance regarding the Texas Library Connection. Responding to district needs for information, orientation, and access to new technologies through our Technology Preview Center.

Region 19 ESC has developed partnerships with various higher education institutions and nonprofit organizations to enhance, promote and support improving technology integration in classrooms and homes across the region by collaborating on projects such as:

- Technology Innovations Challenge Grant: providing teacher training, computer equipment, and innovative desktop videoconferencing equipment to every district in the region.
- Technology Integration in Education Grant: providing teacher training, computer equipment, and computer literacy skills to 150 new teachers and their mentors. Mentor teachers provide "anywhere-anytime" support through electronic communication.
- NovaNet Rural Cooperative: Allowing small, rural districts affordable membership and access to NovaNet services.

Educator Preparation and Development

Building on the foundation of the Technology Applications TEKS and technology strands across the curriculum, Region 19 ESC engages educators and future educators in professional development designed to integrate technology for the purpose of improving student performance. Opportunities for educators to build and sustain skills include:

- Training in technology standards for beginning teachers and technology integration for all participants in the Teacher Preparation Certification Program (TPCP).
- Mentoring strategies to increase the implementation of Technology Applications TEKS and build campus capacity for technology integration.

- Developing and expanding desktop videoconferencing in nine rural districts through the Challenge Grant.
- Expanding videoconferencing capabilities throughout the region to enhance teacher collaboration and project development.
- Offering custom-tailored professional development to all districts.
- Facilitating the Regional Technology Advisory Council with membership from all districts, two universities, the community college and business partners.

Administrative and Support Services

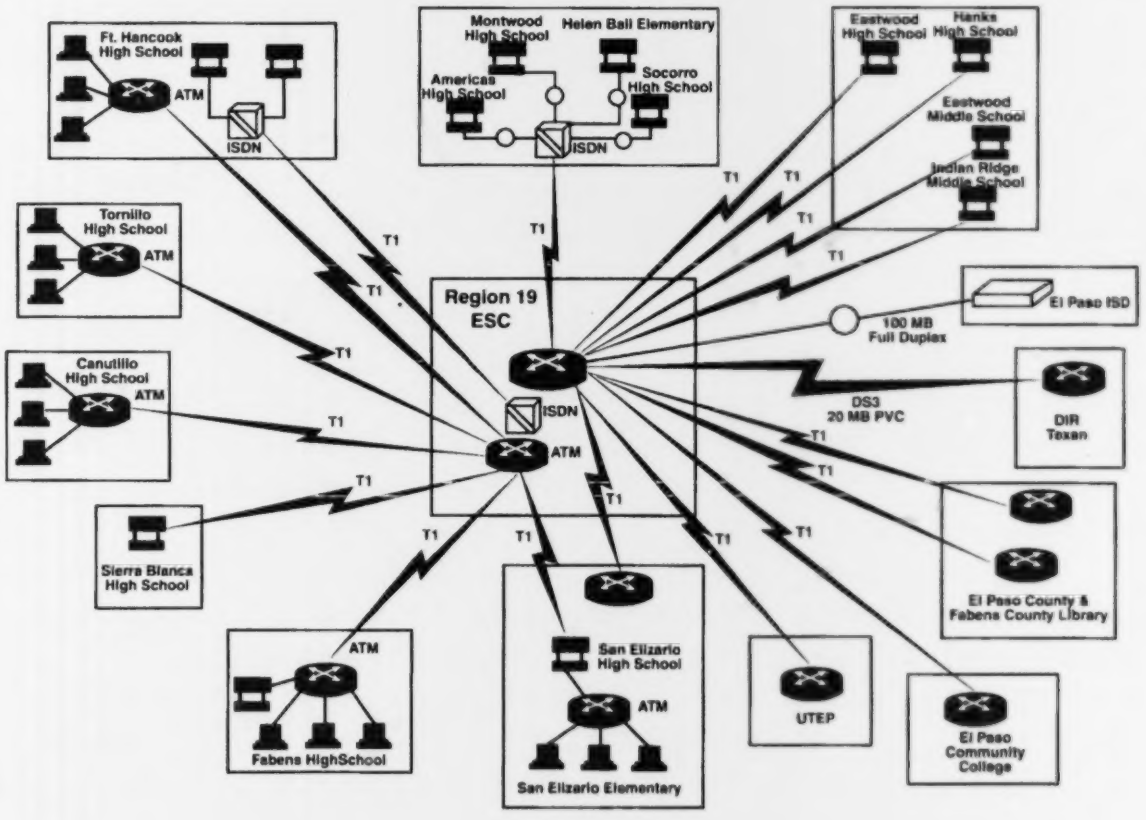
Region 19 ESC offers training opportunities, technical assistance and collaboration among districts, community groups, and business partnerships, by providing:

- Support for districts' payroll and student records.
- Product development for district data management.
- PEIMS training on data standards and editor software.
- Customized product programs for TAAS data disaggregation, campus planning time and effort, and lesson planning aligned to TEKS.
- Distance Education protocol development, facilitator training, and course design.

Infrastructure for Technology

Region 19 works with twelve local districts to support network development and expansion. The ESC infrastructure uses ATM, ISDN and TCP/IP to deliver and support innovative, high-quality classroom and individual desktop videoconferencing across nine rural districts. ESC-19 supports two-way compressed digital technologies and is the hub for digital T1 lines that extend to a variety of distance education sites. Region 19 ESC provides Internet and e-mail services to local districts, county offices, and a county library through a 20 mbps pipe. The ESC also offers ongoing support and consultative services on network design, development, and enhancement. For 2002-03, Region 19 ESC will be implementing new hardware and software to facilitate the growing demand for Web-based professional development.

Region 19 ESC
Integrated Information Network



Region 20 Education Service Center
San Antonio, Texas • 210-370-5200 • www.esc20.net

A snapshot of Region 20 reveals 329,825 students in Grades PreK-12, over 22,334 instructional staff, 17,000 square miles, 66 public school districts and charter schools, and 584 campuses. With San Antonio as the only metropolitan hub for business, commerce and technology, the 15-county area served by ESC-20 contains some of the poorest, most needy, isolated, and under-served school districts in Texas. Within Region 20, almost 62% of the 329,825 school-aged children qualify as economically disadvantaged. The diversity among populations and disparity of resources within Region 20 are most clearly illustrated by the comparison of the below-average TAAS results to the above-average percentage of students passing Advanced Placement exams.

The Region 20 network consortium, netVision20, builds collaboration among partners to fulfill a vision of a data, video and voice network connecting every regional school, district office, university, college, library, and other important institutions and agencies across South Texas through high-speed access to the Internet, e-mail, videoconferencing, distance learning, mainframe applications and other data management, and telecommunications services.

Teaching and Learning

Teachers and students are using technology in support of, and enhancement of, teaching and learning as a result of the following programs and services from ESC-20:

- K-12 student proficiency in technology literacy and applications (TA-TEKS).
- Access to content-relevant software and technology tools through Preview Center expansion.
- Student access to industry level technical training, for example; Cisco Academies.

Students and teachers have greater access to instruction and resources through distance-learning experiences via Region 20's supported programs and services:

- Facts On File, an online database of content-relevant materials and resources.
- NovaNET, an online resource with over 10,000 hours of facilitated coursework.
- Expanded videoconference network to over 60 videoconference sites within Region 20.
- High school credit courses required for Recommended and Distinguished Graduation Plans via the T-STAR to the Desktop pilot project.
- Development of three online courses (Integrated Physics and Chemistry, Latin III, and World Geography).
- 19 StarNet classes delivered to over 1000 Texas students.
- Migrant student access to Project SMART via T-STAR to the Desktop and StarNet.

Educator Preparation and Development

As a result of professional development experiences provided by ESC-20, teachers have learned to use technology to support, enhance, and enrich instruction and to facilitate classroom management tasks.

- Curriculum Using Technology (CUT) Institutes, focused on math/science and social studies in 4th-8th grades.
- TIFTech Training for campus teams to use telecommunications infrastructure, integrating technology, facilitating collaboration and increasing community participation.
- Office application tools for instruction and management.
- Technology applications, web page development, and Technology Application TEKS.
- CISCO Networking Academy, focusing on industry-quality networking skills and knowledge.

Educators have increased professional collaboration to use technology in teaching and learning through conference opportunities either sponsored by Region 20 or co-hosted with other partners.

- Regional Technology conference, co-hosted through partnership with Northside, Pleasanton, Southwest Independent School Districts and TCEA.
- Annual Regional Library Resource Roundup for librarians and media specialists.
- Annual Tech Fiesta for administrators, teachers, curriculum leaders and technologists.

Educators have expanded their participation in professional development opportunities offered through distance-learning technologies.

- Over 300 hours of continuing education credits earned through Connected University.
- PRIMER-A CD-ROM, for K-2 teachers in support of reading.
- FORUM, an online professional development tool for middle school math teachers.
- Videoconferencing presentations focusing on math resources for elementary teachers.
- Videoconferences with Library of Congress for Region 20 librarians and teachers.
- STAR-Online professional development support provided through STAR Schools.

- Texas Library Connection Information Center, hosted by Region 20, provides training resources and information for educators, students, parents, and librarians. E-learning modules help the TLC community learn more about this statewide resource-sharing project.
- Over 150 hours of SBEC-approved professional development workshops delivered via the StarNet satellite education network.

Administration and Support Services

- Increased technical support for districts and campuses through training of 394 people in one or more of the 13 courses in Region 20 Technical Training Institute.
- Technology planning and E-Rate update sessions attended by 17 ESC-20 administrators.
- Technical assistance with PDAS software provided to Region 20 administrators.
- Three RSCCC training sessions for ESC site coordinators delivered via T-STAR to the Desktop.
- Focus group meetings with Technology Directors to share information and conduct assessments.
- The Executive Committee and Steering Committee for the network consortium, netVision20, provide guidance and management to accomplish the goals of the region-wide network.

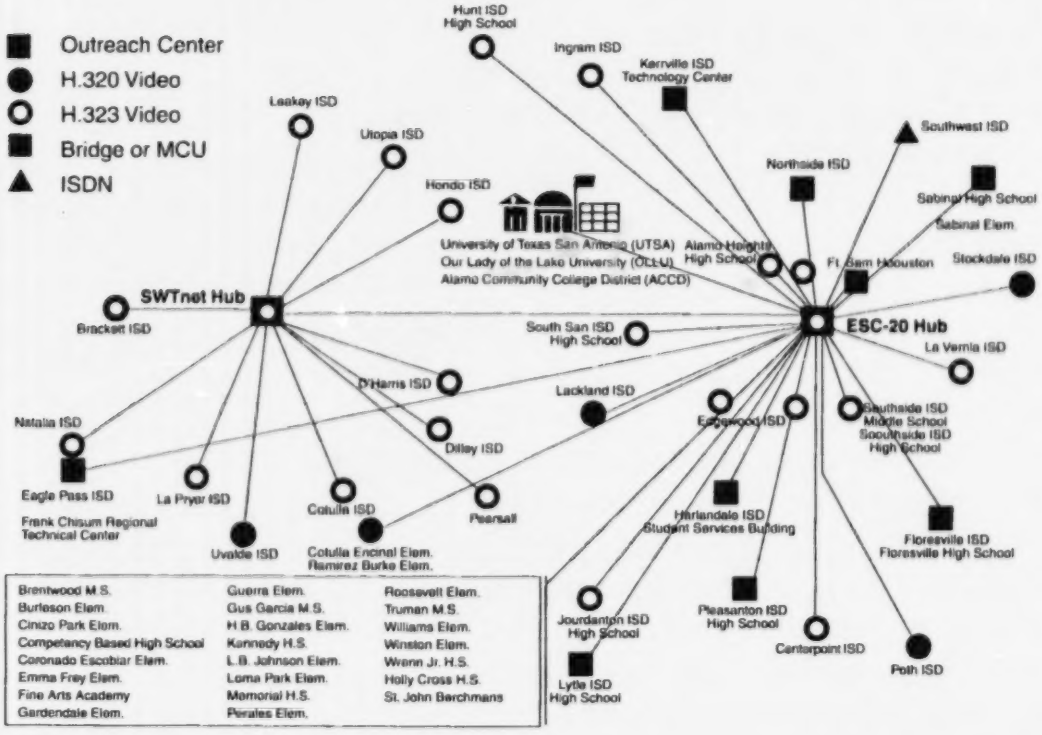
Infrastructure for Technology

A region-wide infrastructure that supports learning and administrative functions has been developed and supported by netVision20 and Region 20 to include the following features:

- Internet services: increased bandwidth, greater network security, and filtering services.
- T-STAR to the Desktop with a gateway encapsulator to deliver satellite programming.
- FCC license to support satellite broadcasts via the T-STAR satellite network.
- Upgraded MCU capacity for more videoconference access.
- Web-based self-scheduler for videoconferences.
- Consultant services for development, expansion, and support of district networks.

Emphasis of the consortium was made on interoperability, partnership, sharing best practices, maximizing resources and vision of technology in education. The district's technology vision plus netVision20 equals increased learning opportunities for students and staff.

Mr. Allen Bordelon
Technology Director, La Vernia



CAMPUS CHART

2002 - 2003
Texas STaR Chart

a Tool for Planning and Assessing

School Technology and Readiness

aligned with the
Long-Range Plan for Technology, 1996-2010

Recommended by the Educational Technology Advisory Committee
Educational Technology Division
Texas Education Agency

Educational Technology Advisory Committee (ETAC) 2001-2003

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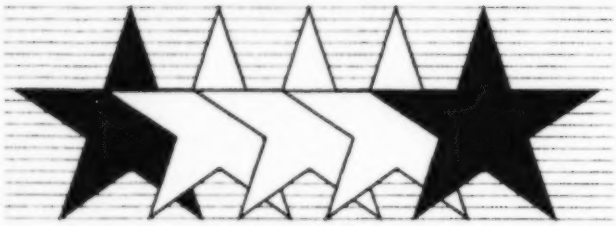

The Texas STaR Chart

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The Educational Technology Advisory Committee would like to thank the CEO Forum for allowing us to adapt the *CEO Forum STaR Chart* to meet the needs of Texas educators as we strive to provide students with the skills they need to be contributing citizens and productive workers in the 21st Century and beyond.

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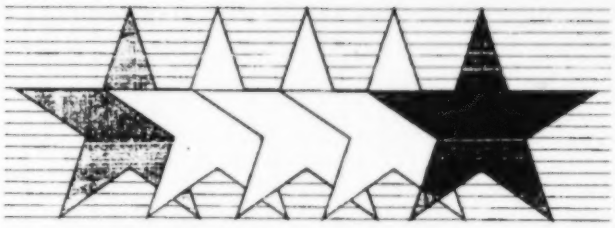


To: **Administrator Addressed**

From: **Educational Technology Advisory Committee**

Subject: **The Texas STaR Chart**

Date: **Summer 2002**

The Texas Education Agency Educational Technology Advisory Committee (ETAC) developed the **Texas School Technology and Readiness (STaR) Chart**, an online resource tool for self-assessment of your campus' and district's efforts to effectively integrate technology across the curriculum. The statewide Educational Technology Coordinating Council's (ETCC) *State of Texas Master Plan for Educational Technology 2000-2003* recommends that this rubric serve as the standard for assessing technology preparedness in K-12 schools.

The **Texas STaR Chart** is a tool designed for use in technology planning, budgeting for resources, and evaluation of progress in local technology projects. Future applications for state funded technology grants will request a completed campus or district Texas STaR Chart profile to be filed with the application as an indicator of current status and progress and as a formative and/or summative evaluation tool. The online assessment may be used as a basis for dialogue with staff, administrators, technology directors, school board members and community leaders to plan for future growth.

The **Texas STaR Chart** models the national *CEO Forum STaR Chart* in structure and draws measures from a variety of national and statewide technology guidelines. It establishes a clear framework for measuring how well schools are prepared to equip students with the knowledge and skills they need to thrive in today's information technology economy.

The **Texas STaR Chart** and the accompanying Campus Analysis of School Technology and Readiness form produce a profile of your campus' status toward reaching the goals of the *Long-Range Plan for Technology, 1996-2010* (LRPT). The profile indicators place your campus at one of four levels of progress in each key area of the LRPT: Early Tech, Developing Tech, Advanced Tech, or Target Tech.

Please complete the survey located at the Web site below, and use the printed charts, graphs and information to compare your campus' progress to like-sized campuses and to the statewide profile. Your data will be compiled with those of other campuses to provide an overall picture of the state of technology in Texas. Additional statewide aggregated data will be available in the Spring of 2003.

This printed version of the **Texas STaR Chart** materials is provided for your reference.

http://www.tea.state.tx.us/technology/etac/campus_txstar

Texas STaR Chart:
A Tool for Planning and Assessing School Technology and Readiness

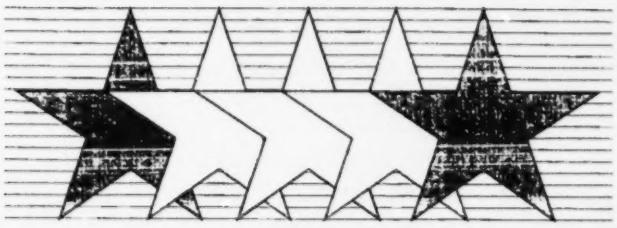
The Texas STaR Chart, patterned after the *CEO Forum STaR Chart*, has been developed around the four key areas of the *Long-Range Plan for Technology, 1996-2010:* Teaching and Learning, Educator Preparation and Development, Administration and Support Services, and Infrastructure for Technology. The Texas STaR Chart is designed to help campuses and districts determine their progress toward meeting the goals of the *Long-Range Plan for Technology, 1996-2010*, as well as meeting the goals of their district. The Texas STaR Chart will also assist in the measurement of the impact of state and local efforts to improve student learning through the use of technology.

The Texas STaR Chart will Help Campuses and Districts Answer Some Critical Questions

1) What are your campus' and district's current educational technology profiles?
2) What evidence can be provided to demonstrate their progress in meeting the goals of the *Long-Range Plan for Technology, 1996-2010*?
3) What areas should your campus and district focus on to improve its level of technology integration to ensure the best possible teaching and learning?

The Texas STaR Chart Can Be Used

- ★ To create and/or to update the district's Technology Plan.
- ★ To set benchmarks and goals. Campuses and districts may use the chart to identify current education technology profiles, establish goals, and monitor progress.
- ★ To create individualized assessment tools. Education administrators and policymakers may use the Texas STaR Chart as the basis for technology assessments and to evaluate varied perspectives of different staff and clientele.
- ★ To apply for grants. The Texas STaR Chart will help schools identify their educational technology needs as they apply for grants.
- ★ To determine funding priorities. Education administrators and policymakers can use the Texas STaR Chart to determine where to allocate funds.
- ★ To use the Texas STaR Chart for a historical perspective. Campuses and districts can complete the survey online and then use the profile annually to gauge their progress. The data can be reported to school boards, and community, campus or district planning committees to gauge progress and align with national and state standards.
- ★ To help conceptualize your campus' or district's vision of technology.



Instructions for Completing a Campus Texas STaR Chart Profile

The printed Texas STaR Chart materials may be used for discussion and collection of data. The online Texas STaR Chart provides campus and district reports that includes charts, graphs, and a customized Texas STaR Chart. Use the instructions below and those online at the Web site www.tea.state.tx.us/technology/etac/campus_txstar to develop your campus STaR profile.

1. The *Long-Range Plan for Technology, 1996-2010* identifies four Key Areas: Teaching and Learning, Educator Preparation and Development, Administration and Support Services, and Infrastructure for Technology.

2. Each Key Area is divided into Focus Areas. Within each Focus Area, indicators are provided for assessing the campus' Level of Progress. It is possible that the campus may have indicators in more than one Level of Progress. Select the **one** Level of Progress that best describes your campus.

3. In order to generate summary charts and graphs, complete the online Texas STaR Chart at www.tea.state.tx.us/technology/etac/campus_txstar.

4. The Texas STaR Chart materials contained in this document may be used to collect and record campus data.

The Texas STaR Chart is a tool to help Texas school districts and campuses develop their own long-range technology plan aligned with the *Long-Range Plan for Technology, 1996-2010.* Campuses and districts can use this data to perform a needs assessment, judge progress, set benchmarks and goals, determine funding priorities, provide information for technology planning, and measure the impact of state and local efforts to improve student learning through the use of technology. Districts will be able to view this data by region, district size, and district type (urban, rural, etc.). This data will not be used as an evaluation measure of individual campuses or districts.

Impact of the Texas STaR Chart
State of Texas Master Plan for Educational Technology 2000-2003

The Texas STaR Chart will serve as a key component in meeting the goals of the *State of Texas Master Plan for Educational Technology 2000-2003*. The 76th Legislature called for creation of a task force to ensure a more integrated vision and planning across Texas state agencies, institutions of higher education and local education agencies, to reinforce the state efforts to implement educational technology initiatives. This taskforce was established as the Education Technology Coordinating Council (ETCC). In January, 2001, ETCC released its Master Plan as a collaborative effort of the Texas Education Agency (TEA), the Department of Information Resources (DIR), the General Services Commission (GSC), the State Board of Educator Certification (SBEC), the Telecommunications Infrastructure Fund (TIF) Board, the Texas State Library and Archives Commission (TSLAC), the Texas Higher Education Coordinating Board (THECB), and the Schools, Colleges, and Departments of Education (SCDEs).

The Texas STaR Chart is a crucial element in the state's efforts of implementing the *State of Texas Master Plan for Educational Technology 2000-2003* and can be used to measure the state's accomplishments in meeting the established goals. The Texas STaR Chart can be used to promote a minimum level of technology access and use in the state's local education agencies and teacher preparation institutions.

Those interested in reviewing the *State of Texas Master Plan for Educational Technology 2000-2003* can access the document online at www.etcc.state.tx.us.

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THE TEXAS CHALLENGE

The world is different, and never in our history has success of the State and its citizens been so tightly linked to ongoing learning. If the social, intellectual, and economic opportunities of the Digital Age are to be shared by all Texans, our citizens - and especially our young citizens - must be guaranteed an excellent 21st Century education.

Texas' *Long-Range Plan for Technology, 1996-2010* organizes recommendations for effective integration of technology in schools within four key areas, with clear challenges in each area. The areas include: Teaching and Learning, Educator Preparation and Development, Administration and Support Services, and Infrastructure for Technology.

Challenges in Teaching and Learning

The traditional model of schooling, with the teacher choosing what is to be learned and then serving as the source of knowledge and with the student acting as the receiver of that knowledge, is not adequate for 21st Century, world-class education. Roles of teacher and learner must change. In the Digital Age the sheer volume of information means that Texas students cannot be passive recipients of instruction; rather, Texas students must become active participants in the learning process. It is vitally important that students know where and how to find content relevant to their needs and know how to be sure their sources are credible. It is important that students gain skills for collaboratively constructing, using, and communicating the knowledge they need for a chosen task, project, or learning pursuit. Learning and teaching must be different from past traditions.

> ***"...we must also prepare teachers far differently for significantly different roles, different kids, and different tools..."***

Information and communications technologies empower learners to undertake authentic projects for learning and productivity even in early grades. These technologies make possible collaboration of diverse work and learning groups and provide access to rich resources and expertise previously unavailable. Indeed, these technologies enable us to envision learning and student productivity that extends far beyond the walls of the classroom and far beyond the rigidity of traditional school schedules. Our challenge in teaching and learning is to move traditional learning and teaching from teacher to student, to a system empowering citizens for a global and digital world of information. This transformation is not a simple undertaking, but it is one that must occur if we are to prepare young Texans for their future lives.

"Learning and teaching must be different."

Challenges in Preparation and Development of Educators

Preparing teachers and administrators to effectively facilitate and manage 21st Century learning in technology and information rich settings involves radical retooling of the existing professional core of the educational system. Securing time, resources, and effective models for educator professional development presents a tremendous challenge to our state and to the entire nation. That professional development carries the urgent charge of supporting - indeed of catalyzing - the move from traditional schooling to 21st Century schooling.

As the "baby boom" educators move into retirement, it will be our systems of teacher and administrator preparation that must fuel education of young Texans with qualified and skilled personnel. The number of new teachers and administrators needed within the next decade based on student growth and projected retirements is alarming. We must also prepare teachers for significantly different roles, different kids, and different tools and resources. This realization presents the PK-12 community and teacher preparation institutions with the greatest challenges in their history.

"Issues of support and maintenance for the existing and evolving technologies will test our true commitment to connected schools."

Challenges in Administration and Support Services

The process of integrating technology in schools, in itself, promotes school reform. It is complex schoolwide innovation, and, as such, vision-building, administrator commitment, and skilled leadership, play pivotal roles in success. Texas faces a significant challenge in providing visionary school leadership with the necessary background and requisite skills to lead and nurture the changes technology brings.

Rapid changes on many fronts make it virtually impossible for any individual within a school system to maintain the necessary knowledge to represent all facets of planning for and implementing technology. For this reason, collaborative and ongoing planning consistent with the *Long-Range Plan for Technology, 1996-2010*, and articulated with campus and district plans is necessary if schools are to see improved student learning, increased productivity, and more efficient operations. Fulfilling the vision of technology requires district leaders who articulate and advocate a vision of what technology can do for teaching and learning, and school operations.

Systems of technical support, staffing patterns, budgeting functions, and funding acquisition, require ongoing professional and staff growth. Appropriate technical support services are required in order to maximize educational benefits from our investment in technology. Schools are vulnerable to special challenges for staff retention as demands grow in the booming digital and IT sectors for personnel. School decision-makers are challenged to budget real costs of technology, both initial and ongoing, and to secure funding to support that budget.

Infrastructure for Technology

Texas has made tremendous strides during the last half-decade in connecting schools to each other, to external resources, and to the Internet. Texas schools have been fortunate to have the support of the Texas legislature and the federal government in building the technology infrastructure for schools through direct funding, grants, and discounts. As a result of these resources, districts have begun to build the infrastructure that will allow students and teachers to make use of technology tools that are basic and necessary for educating students today and in the future. Challenges clearly remain. Not all districts, campuses, and classrooms, have the connectivity and tools that they need to integrate technology into the teaching and learning process. Work remains to ensure that connectivity reaches all instructional and professional work areas, and that infrastructure capacity supports promising practices in instruction, school leadership, and operations.

Issues of support and maintenance for existing and evolving technologies will test our true commitment to connected schools. Maintaining appropriate funding levels, securing and retaining qualified staff, maintaining the infrastructure, providing upgrades and greater bandwidth, all provide significant challenges for schools.

The infrastructure of a school is the critical element of support for all four areas: administration, teaching and learning, and educator preparation and development. While school connectivity presents tremendous challenges, implementing that connectivity offers new and exciting opportunities for transforming the institution of schooling.

Summary

Learning for the 21st Century requires new skills, new tools, and new knowledge. Students today must learn different ways to work with tools, different ways to work with information, and different ways to work with people. Our students will function in ever-changing and richly diverse workgroups that often cross national boundaries. One of the greatest challenges our schools face is ensuring that each student is equipped to flourish within a wide array of learning and work communities. Today's world demands this and technology facilitates it. Schools must also foster flexibility - for the 21st Century will demand that its citizens are able to deal with continuous and significant change. Finally, precisely because of ongoing change, Texas students must learn to learn. They must develop skills and habits of learning that will serve them for a lifetime.

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The Texas School Technology

KEY AREAS:	TEACHING AND LEARNING					
FOCUS AREAS: / LEVELS OF PROGRESS	(A) Impact of Technology on Teacher Role and Collaborative Learning	(B) Patterns of Teacher Use	(C) Frequency/ Design of Instructional Setting Using Digital Content	(D) Curriculum Areas	(E) Technology Applications TEKS Assessment	(F) Patterns of Student Use
I. Early Tech	Teacher-centered lectures Students use technology to work on individual projects	Use technology as a supplement	Occasional computer use in library or computer lab setting	No technology use or integration occurring in the foundation subject area TEKS Technology use is restricted to technology skills classes only	*Campuses that serve grades K-8:* Within each grade level cluster (K-2, 3-5, 6-8), some but not all Technology Applications TEKS are met *High School Campuses:* At least 4 Technology Applications courses offered	Students occasionally use software applications and/or use tutorial software for drill and practice
II. Developing Tech	Teacher-directed learning Students use technology for cooperative projects in their own classroom	Use technology to streamline administrative functions (i.e. gradebook, attendance, word processing, E-mail, AEIS information etc.)	Regular weekly computer use to supplement classroom instruction, primarily in lab and library settings	Use of technology is minimal in foundation subject area TEKS	*Campuses that serve grades K-8:* Within each grade level cluster (K-2, 3-5, 6-8), most Technology Applications TEKS are met *High School Campuses:* At least 4 Technology Applications courses offered and at least 2 taught	Students regularly use technology on an individual basis to access electronic information and, for communication and presentation projects
III. Advanced Tech	Teacher-facilitated learning Students use technology to create communities of inquiry within their own community	Use technology for research, lesson planning, multimedia and graphical presentations, simulations, and to correspond with experts, peers, and parents	Regular weekly technology use for integrated curriculum activities utilizing various instructional settings (i.e.: classroom computers, libraries, labs, and portable technologies)	Technology is integrated into foundation subject area TEKS, and activities are separated by subject and grade	*Campuses that serve grades K-8:* Within each grade level cluster (K-2, 3-5, 6-8), all Technology Applications TEKS are met Grade-level benchmarks (K-8) are established *High School Campuses:* At least 4 Technology Applications courses offered and at least 4 taught	Students work with peers and experts to evaluate information, analyze data and content in order to problem solve Students select appropriate technology tools to convey knowledge and skills learned
IV. Target Tech	Teacher as facilitator, mentor, and co-learner Student-centered learning in communities of inquiry with business, industry, and higher education	Integration of evolving technologies transforms the teaching process by allowing for greater levels of interest, inquiry, analysis, collaboration, creativity and content production	Students have on-demand access to all appropriate technologies to complete activities that have been seamlessly integrated into all core curriculum areas	Technology is integral to all subject area TEKS	*Campuses that serve grades K-8:* Within each grade level cluster (K-2, 3-5, 6-8), all Technology Applications TEKS are met Grade-level benchmarks (K-8) are met *High School Campuses:* All Technology Applications courses offered with a minimum of 4 taught, or included as new courses developed as local elective or included as independent study course	Students work collaboratively in communities of inquiry to propose, assess, and implement solutions to real world problems Students communicate effectively with a variety of audiences

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and Readiness (STaR) Chart

EDUCATOR PREPARATION AND DEVELOPMENT					
(G) Content of Training	**(H) Capabilities of Educators**	**(I) Leadership and Capabilities of Administrators**	**(J) Models of Professional Development**	**(K) Levels of Understanding and Patterns of Use**	**(L) Technology Budget Allocated to Technology Professional Development**
Technology literacy skills including multimedia and the Internet	10 % meet SBEC proficiencies and implement in the classroom	Recognizes benefits of technology in instruction; minimal personal use	Whole group	Most at entry or adoption stage	5% or less
Use of technology in administrative task and classroom management; use of TLC resources	40 % meet SBEC proficiencies and implement in the classroom	Expects teachers to use technology for administrative and classroom management tasks; uses technology in some aspects of daily work	Whole group with follow-up to facilitate implementation	Most at adaptation stage	6-24 %
Integration of technology into teaching and learning; regularly uses TLC resources to enrich instruction	60 % meet SBEC proficiencies and implement in the classroom	Recognizes and identifies exemplary use of technology in instruction; models use of technology in daily work	Long term and ongoing professional development; involvement in a developmental/ improvement process	Most at appropriation stage	25-29 %
Regular creation and communication of new technology-supported, learner-centered projects; vertical alignment of Technology Application TEKS; anytime anywhere use of TLC by entire school community	100 % meet SBEC proficiencies and implement in the classroom	Ensures integration of appropriate technologies to maximize learning and teaching; involves and educates the school community around issues of technology integration	Creates communities of inquiry and knowledge building; anytime, anywhere learning available through a variety of delivery systems; individually guided activities	Most at invention stage	30 % or more

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No matter where a school falls along the spectrum, the Texas STaR Chart offers valuable information that initiates discussions, drives decisions, and produces results.

ADMINISTRATION AND SUPPORT SERVICES				
(M) Vision and Planning	**(N) Technical Support**	**(O) Instructional and Administrative Staffing**	**(P) Budget**	**(Q) Funding**
No campus technology plan; technology used mainly for administrative tasks such as word processing, budgeting, attendance, gradebooks	No technical support on-site; technical support call-in; response time greater than 24 hours	No full time dedicated district level Technology Coordinator Campus educator serving as local technical support	Campus budget for hardware and software purchases and professional development	Technology allotment only
Campus technology plan aligns with the Texas LRPT; integrated into district; used for internal planning, budgeting, applying for external funding and discounts Teachers/administrators have a vision for technology use for direct instruction and some student use	At least one technical staff to **750** computers Centrally deployed technical support call-in; response time less than 24 hours	Full-time district level Technology Coordinator/Assistant Superintendent for Technology Centrally located instructional technology staff; one for every **5,000** students Additional staff as needed, such as trainer, webmaster, network administrator	Campus budget for hardware and software purchases, professional development, minimal staffing support, and some ongoing costs	Technology allotment and minimum grants/ minimal local funding
In addition to the above, the campus technology plan is approved by the board and supported by superintendent Campus plan collaboratively developed, guiding policy and practice; regularly updated Campus plan addresses Technology Application TEKS and higher order teaching and learning Administrators use technology tools for planning	At least one technical staff to **500** computers Central technology support use remote management software tools Centrally deployed and minimal campus-based technical support on-site; response time is less than 8 hours	Full-time district level Technology Coordinator/Assistant Superintendent for Technology Centrally located instructional technology staff; one for every **1,000** students Additional staff as needed	Campus budget for hardware and software purchases, professional development, adequate staffing support, and ongoing costs	Technology allotment, TIF, other competitive grants, E-Rate discounts applied to technology budget, **locally supplemented** through tax dollars
In addition to the above, the campus technology plan is actively supported by the board Campus plan is collaboratively developed, guiding policy and practice; updated at least annually The campus plan is focused on student success; based on needs, research, proven teaching and learning principles Administrators use technology tools for planning and decision making	At least one technical staff to **350** computers; centrally deployed and dedicated campus-based Central technology support use remote management software tools Technical support on-site; response time is less than 4 hours	Full-time district level Technology Coordinator/Assistant Superintendent for Technology **Dedicated** campus-based instructional technology support staff--one per campus **plus** one for every **1,000 students** Additional staff as needed	Campus budget for hardware and software purchases, **sufficient** staffing support, costs for professional development, incentives for professional development, facilities, and other ongoing costs Appropriate budget to support the district technology plan	Technology allotment, TIF, **other competitive grants**, E-Rate discounts, **locally supplemented** through tax dollars Other state and federal programs directed to support technology funding, bond funds, business partnerships, donations, foundations, and other local funds designated for technology

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Education today needs a comprehensive vision that can illustrate where the use of technology can take the 21st Century student. The Texas STaR Chart was designed to help schools and districts develop their vision and implement clear plan to reach that vision.

—Ken Kay, Executive Director, the CEO Forum on Education and Technology

INFRASTRUCTURE FOR TECHNOLOGY

(R) Students per Computer	(S) Internet Access Connectivity/Speed	(T) Distance Learning	(U) LAN/WAN	(V) Other Technologies
Ten or more students per Internet-connected multimedia computer Replacement cycle established by district/ campus is 6 or more years	Dial-up connectivity to the Internet available only on a few computers	No Web based/online learning available at the campus No satellite based learning available at the campus No two-way interactive video distance learning capabilities available at the campus	Limited print/file sharing network at the campus Some shared resources available on the campus LAN	Shared use of resources such as, but not limited to, TVs, VCRs, digital cameras, scanners, classroom sets of programmable calculators
Between 5 and 9 students per Internet-connected multimedia computer Replacement cycle established by district/ campus is every 5 years	Direct connectivity to the Internet available at the campus in 50% of the rooms, including the library Adequate bandwidth to the campus to avoid most delays	Web based/online learning available at the campus Satellite based learning available at the campus No two-way interactive video distance learning capabilities available at the campus, but available in the district	Most rooms connected to the LAN/WAN with student access Minimum 10/100 Cat 5 **hubbed** network High-end servers, such as Novell or NT servers, serving **some** applications	One educator per computer as recommended by the *Long-Range Plan for Technology, 1996-2010* Shared use of resources such as TVs, VCRs, digital cameras, scanners, digital projectors, and analog video cameras; classroom sets of programmable calculators
Four or less students per Internet-connected multimedia computer Replacement cycle established by district/ campus is every 4 years	Direct connectivity to the Internet in **75%** of the rooms, including the library Adequate bandwidth to each classroom over the local area network (at least 10/100 MB LAN) to avoid most delays Easy access for students and teachers	Web based/online learning available at the campus Satellite based learning available at the campus Two-way interactive video distance learning capabilities available in **at least one classroom**	**All rooms** connected to the LAN/WAN with student access Minimum 10/100 Cat 5 **switched** network High-end servers, such as Novell or NT servers, serving **multiple** applications	One educator per computer as recommended by the *Long-Range Plan for Technology, 1996-2010* Dedicated and assigned use of commonly used technologies such as computers with projection devices, TVs, VCRs, programmable calculators assigned to each student, and telephones in each classroom **Shared use of specialized technologies** such as digital cameras, scanners, document cameras and projectors, and digital video cameras
In addition to 4 or less students per Internet-connected multimedia computer, on-demand access for every student as recommended by the *Long-Range Plan for Technology, 1996-2010* Replacement cycle established by district/ campus is 3 years or less	Direct connectivity to the Internet available in **all** rooms on all campuses Adequate bandwidth to each classroom over the local area network (at least 100 MB or fiber network LAN) Easy access for students and teachers including some wireless connectivity	Web based/online learning available at the campus Satellite based learning available at the campus Two-way interactive video distance learning capabilities available at the campus in **multiple** classrooms	All rooms connected to the WAN **sharing** multiple district-wide **resources** Campus is connected to **robust** WAN with **100** MB/ GB and/or fiber **switched network** that allows for resources such as, but not limited to, video streaming and desktop teleconferencing **Easy access** to network resources for students and teachers, **including** some wireless connectivity	One educator per computer as recommended by the *Long-Range Plan for Technology, 1996-2010* Fully equipped classrooms with all the technology that is available to enhance student instruction readily available including all the above as well as the use of new and **emerging** technologies

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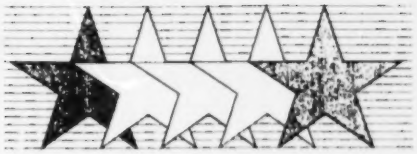

Glossary

Collaboratively Developed Technology Plan
Plan for the use of technology in a campus or district developed with active involvement of teachers, school staff, administrators, students, industry representatives, and other community representatives.

Collaborative Learning
An instructional strategy in which several students work together on an assignment, with individuals sharing responsibility for various tasks in an interactive process of ongoing dialogue.

Computer
Multimedia Internet accessible workstation.

Community of Inquiry
A group of persons who engage in ongoing dialogue about questions of shared interest or mutual concern, for the purpose of generating workable, productive solutions to meaningful problems, or an enhanced base of knowledge related to the common interest.

Digital Content
Digitized multimedia material that calls upon students to seek and manipulate information in collaborative, creative and engaging ways that make digital learning possible; includes video on demand, software, CD-ROMs, Web sites, E-mail, online learning management systems, computer simulations, streamed discussion, data files, databases and audio.

Easy Internet Access
Ready access to a computer connected to the Internet with a priority of student use in reasonable proximity.

Flexible Scheduling
A strategy for providing access to an educational resource that permits use as needed rather than on a predetermined structured schedule.

Integrated
The use of technology by students and teachers to enhance teaching and learning and to support existing curricular goals and objectives.

Local Funding
Funds derived from local budgets, bond elections, and other local initiatives.

State and Federal Funds
State funds such as, but not limited to, the Technology Allotment and TIF grants; federal funds such as, but not limited to, TIE, NCLB and E-Rate.

Supplement vs. Supplant
New funds used to supplement technology activities and not used to replace local, state or federal funds already in place.

Technology Allotment
All schools receive $30 per student per year for the purchase of technology to support the *Long-Range Plan for Technology, 1996-2010.*

Texas Library Connection (TLC)
A statewide technology initiative administered by the Texas Education Agency, provides current, relevant information resources to Texas school communities enrolled in the project.

TIF Grants
Funding provided by the Telecommunications Infrastructure Fund (TIF) as created in 1995 by House Bill 2128.

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Standards

State Board for Educator Certification Standards for All Teachers

Standard I. All teachers use technology-related terms, concepts, data input strategies, and ethical practices to make informed decisions about current technologies and their applications.

Standard II. All teachers identify task requirements, apply search strategies, and use current technology to efficiently acquire, analyze, and evaluate a variety of electronic information.

Standard III. All teachers use task-appropriate tools to synthesize knowledge, create and modify solutions, and evaluate results in a way that supports the work of individuals and groups in problem-solving situations.

Standard IV. All teachers communicate information in different formats and for diverse audiences.

Standard V. All teachers know how to plan, organize, deliver, and evaluate instruction for all students that incorporates the effective use of current technology for teaching and integrating the Technology Applications Texas Essential Knowledge and Skills (TEKS) into the curriculum.

Stages of Professional Development (CEO Forum STaR Chart)

Entry/Adoption Stage. Educators move from the initial struggles to learn the basics of using technology to successful use of technology on a basic level (e.g., integration of drill and practice software into instruction).

Adaptation Stage. Educators move from basic use of technology to discovery of its potential for increased productivity (e.g., use of word processors for student writing, and research on the Internet).

Appropriation Stage. Having achieved complete mastery over the technology, educators use it effortlessly as a tool to accomplish a variety of instructional and management goals.

Invention Stage. Educators are prepared to develop entirely new learning environments that utilize technology as a flexible tool. Learning becomes more collaborative, interactive and customized.

National Staff Development Council Standards

Standard I. The teacher designs instruction appropriate for all students that reflects an understanding of relevant content and is based on continuous and appropriate assessment.

Standard II. The teacher creates a classroom environment of respect and rapport that fosters a positive climate for learning, equity, and excellence.

Standard III. The teacher promotes student learning by providing responsive instruction that makes use of effective communication techniques, instructional strategies that actively engage students in the learning process, and timely, high-quality feedback.

Standard IV. The teacher fulfills professional roles and responsibilities and adheres to legal and ethical requirements of the profession.

Related Web Sites

http://www.tea.state.tx.us

This site for Texas educators provides immediate information needed daily in schools. Keep it bookmarked also for quick links to Education Service Centers and the State Board for Educator Certification.

http://www.etcc.state.tx.us

This site provides information on the *State of Texas Master Plan for Educational Technology 2000-2003*. This plan was developed under the provisions of Rider 74, House Bill 1, 76th Legislature to the Texas Education Agency.

http://www.tifb.state.tx.us

The TIF site connects educators to grant programs available for Texas schools. An electronic curriculum for TIFTech Training is also located at this site.

http://www.sbec.state.tx.us

Technology standards information at this site assists educators in planning for quality professional development programs. In addition, the State Board of Educator Certification provides information on certifications for all professional educators.

http://www.tcea.org

The Texas Computer Education Association supports educators in learning about technology and using it in the classroom. As the sponsor of the largest Texas conference focusing on educational technology, the organization provides online registration, program information, and student and teacher contest information.

http://www.iste.org

The International Society for Technology in Education provides major resources for educators who strive to integrate technology, teaching, and learning. Standards are available for both students and teachers at this site. The ISTE professional journals detail excellent examples of the integration of technology into the curriculum. Both individual and district memberships are available.

http://ceoforum.org

The CEO Forum provides reports on the status of educational technology in the United States in the areas of infrastructure, professional development, digital content, and accountability. The K-12 STaR Chart, a Web based tool, allows both districts and campuses to self-assess components of a total technology program.

http://www.cosn.org

The Consortium for School Networking promotes the use of telecommunications to improve K-12 learning. Taking TCO to the Classroom, is just one of their superior vendor neutral resources for schools.

http://www.nsdc.org

The National Staff Development Council gives districts information not only on high quality training programs with intensive follow-up and support, but also other growth-promoting processes such as study groups, action research, and peer coaching. NSDC, as an organization, believes that staff development is fundamentally people improvement. The library offers excellent full-text professional articles.

http://tasanet.org/depserv/profdev/Tech_leadership_academy.html

The Texas Association of School Administrators with Texas Tech University, the Texas Business and Education Coalition (TBEC), and Texas Computer Education Association will train approximately 50 percent of all Texas superintendents and principals during the three-year period beginning in the 2000-2001 school year. The project is funded through the Bill and Melinda Gates Foundation.

http://www.ncrel.org

The North Central Regional Educational Laboratory helps schools and students reach their full potential as it specializes in educational applications of technology to improve learning. Many resources are located at this site.

http://www.mff.org/edtech

The Milken Family Foundation site provides professional development information as well as high school science inquiry-based learning programs, best practices for middle schools, and reading programs proven to be effective. Their Seven Dimensions for Gauging Progress guides educators in assessing whether or not their schools provide the conditions necessary for improving student learning with technology.

http://www.ed.gov/offices/OERI/ORAD/LTD/newtech_progs.html

These exemplary and promising educational technology programs may help districts create quality, effective, and useful projects within their communities.

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Educational Technology Advisory Committee
2001 - 2003

Authority

The Educational Technology Advisory Committee, ETAC, is authorized by the Texas Education Code, 7.055.11. The function of the Educational Technology Advisory Committee is to work in an advisory capacity to increase the equity, efficiency, and effectiveness of student learning, instructional management, staff development, and administration. The efforts of this committee will be in the development, implementation and evaluation of technology guidelines to provide districts with the tools for self-assessment to aid in the effective integration of technology across the curriculum. The committee will bring collective information from across the state and nation to assist in the identification of the needs and future directions of educational technology related to appropriate use of technology, technology proficiencies for teachers, staff development needs for preservice and in-service teachers, and digital content needs.

Charge to the Educational Technology Advisory Committee 2001-2003

Conduct midpoint review and adjustment of the *Long-Range Plan for Technology, 1996-2010* to ensure recommendations remain appropriate, determine if new recommendations are warranted, and create benchmarks or indicators that will let us know where we are as a state and as individual schools and districts in achieving the targets addressed in the LRPT.

Timeline

Fall 1999

Committee selected and approved
First meeting held December 9, 1999
Received and clarified committee charge

Spring of 2000

Formed sub-committees based on *Long-Range Plan for Technology, 1996-2010*
Researched existing tools and resources and developed criteria and questions to be answered

Summer of 2000

Developed rubric with measurement and scale

Fall 2000

Developed draft of *Texas STaR Chart*
Piloted the assessment tool with select group
Recommended refinements

Spring 2001

Released draft of *Texas STaR Chart* for field testing by various stakeholders
Obtained input from stakeholders
Refined survey
Released online *Texas STaR Chart* version for field test

Fall 2001

Implemented *Texas STaR Chart*

Spring 2002

Released first report

Fall 2002

Include statewide results in the *Progress Report on the Long-Range Plan for Technology, 1996-2010* to the 78th Texas Legislature
Release Campus *Texas STaR Chart*

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Texas STaR Chart Summary

Using the Texas STaR Chart, select the cells in each category that best describe your campus.
Enter the corresponding number in the chart below using this scale.

1 = Early Tech **2 = Developing Tech** **3 = Advanced Tech** **4 = Target Tech**

Key Area I: Teaching and Learning

A. Teacher Role and Collaborative Learning	B. Patterns of Teacher Use	C. Frequency/ Design of Instructional Setting	D. Curriculum Areas	E. Technology Applications TEKS/ Assessment	F. Patterns of Student Use	*Total

Key Area II: Educator Preparation and Development

G. Content of Training	H. Capabilities of Educators	I. Leadership and Capabilities of Administrators	J. Models of Professional Development	K. Levels of Understanding and Patterns of Use	L. Technology Budget for Technology Professional Development	*Total

Key Area III: Administration and Support Services

M. Vision and Planning	N. Technical Support	O. Instructional and Administrative Staffing	P. Budget	Q. Funding	*Total

Key Area IV: Infrastructure for Technology

R. Students per Computer	S. Internet Access/ Connectivity/ Speed	T. Distance Learning	U. LAN/WAN	V. Other Technologies	*Total

Key Area Summary

Copy your Key Area totals into the first column below and use the Key Area Rating Range to indicate the Key Area rating for each category.

Key Area	*Key Area Total	Key Area STaR Classification
I. Teaching and Learning	_____	_____
(6 - 8 Early Tech	9 - 14 Developing Tech	15 - 20 Advanced Tech 21-24 Target Tech)
II. Educator Preparation and Development	_____	_____
(6 - 8 Early Tech	9 - 14 Developing Tech	15 - 20 Advanced Tech 21-24 Target Tech)
III. Administration and Support Services	_____	_____
(5 - 7 Early Tech	8 - 12 Developing Tech	13 - 17 Advanced Tech 18 - 20 Target Tech)
IV. Infrastructure for Technology	_____	_____
(5 - 7 Early Tech	8 - 12 Developing Tech	13 - 17 Advanced Tech 18 - 20 Target Tech)

Campus Name: _____ County/Campus Number: _____

School Year: _____ Data Completion Date: _____

Completed by: _____ Email: _____

Please go to the online Texas STaR Chart Assessment (www.tea.state.tx.us/technology/etac/campus_txstar) to enter your results and print summary charts and graphs. Statewide aggregated data will be available in Spring 2003.

Educational Technology Advisory Committee

Texas Education Agency

Educational Technology Division

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Austin, TX 78701

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etac@tea.state.tx.us

Educational Technology Division

Anita Givens	**Nancy Little**
Senior Director	**ETAC Coordinator**

Additional information on the Educational Technology Advisory Committee is available on the World Wide Web at www.tea.state.tx.us/technology/etac

Glossary

Collaboratively Developed Technology Plan - a plan for the use of technology in a campus or district developed with active involvement of teachers, school staff, administrators, students, industry representatives, and other community representatives.

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Computer - multimedia Internet-accessible workstation.

Community of Inquiry - a group of persons who engage in ongoing dialogue about questions of shared interest or mutual concern, for the purpose of generating workable, productive solutions to meaningful problems, or an enhanced base of knowledge related to the common interest.

Digital Content - digitized multimedia material that calls upon students to seek and manipulate information in collaborative, creative and engaging ways that make digital learning possible; includes video on demand, software, CD-ROMs, web sites, e-mail, online learning management systems, computer simulations, streamed discussion, data files, databases and audio.

Distance learning - that in which some materials and/or participants are not local.

Distributed learning - learning engaged by students, educators, staff, community members or others with the support of telecommunications technologies at school, home, business, or other site.

Easy Internet Access - ready access to a computer connected to the Internet with a priority of student use in reasonable proximity.

Educators - broadly defined as professional staff at or affiliated with a public school or district, including teachers, administrators, curriculum coordinators, librarians, and others.

Flexible Scheduling - a strategy for providing access to an educational resource that permits use as needed rather than on a predetermined structured schedule.

Integrated - the use of technology by students and teachers to enhance teaching and learning and to support existing curricular goals and objectives.

Intelligent agents - machine-based entities that can carry out simple instructions from a user.

Just-in-time professional development - professional development resources that are available on-call through access to formal instruction, experts online, intelligent agents, and other resources.

Local Funding - funds derived from local budgets, bond elections, and other local initiatives.

State and Federal Funds - state funds such as, but not limited to, the Technology Allotment and TIF grants; federal funds such as, but not limited to, TIE, NCLB and E-Rate.

Supplement vs. Supplant - new funds used to supplement technology activities and not used to replace local, state or federal funds already in place.

Technology Allotment - all schools receive $30 per student per year for the purchase of technology to support the *Long-Range Plan for Technology, 1996-2010.*

Texas Essential Knowledge and Skills (TEKS) - statements of knowledge and skills and of Performance Descriptions that, in accordance with state statute, will be adopted by the State Board of Education to replace the essential elements. Knowledge and Skills address what all students should know and be able to do. Performance Descriptions are explanations of how students can demonstrate the knowledge and skills they have acquired.

Texas Library Connection (TLC) - a statewide technology initiative administered by the Texas Education Agency, provides current, relevant information resources to Texas school communities enrolled in the project.

TIF Grants - funding provided by the Telecommunications Infrastructure Fund (TIF) as created in 1995 by House Bill 2128.

Virtual relationships or items (as in virtual communities) - based on interactions or objects or representations that are in digital rather than in physical form.

Workstation - (Educator) a computer with transmission, productivity, and presentation capabilities for use by educators in teaching, management, and other professional tasks; can be desktop and/or portable, at local discretion. (Student) a computer with a range of capabilities, depending on local priorities, for use by students in classroom, library, or home use.

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Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a nonsegregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

(6) nondiscriminatory practices relating to the use of a student's first language; and

(7) evidence of published procedures for hearing complaints and grievances.

In addition to conducting reviews, the Texas Education Agency staff representatives check complaints of discrimination made by a citizen or citizens residing in a school district where it is alleged discriminatory practices have occurred or are occurring.

Where a violation of Title VI of the Civil Rights Act is found, the findings are reported to the Office for Civil Rights, U.S. Department of Education.

If there is a direct violation of the Court Order in Civil Action No. 5281 that cannot be cleared through negotiation, the sanctions required by the Court Order are applied.

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